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ABSTRACT

IN ADDITION TO RATING THE INDEPENDENT BEHAVIOR OF GIFTED CHILDREN IN THE INDIVIDUALLY PRESCRIBED INSTRUCTION (IPI) PROGRAM, THIS STUDY ALSO ATTEMPTS TO MEASURE THE ATTITUDE OF CHILDREN, PARENTS, AND TEACHERS TOWARD THE IPI PROGRAM. THE REPORT DISCUSSES THE RATIONALE BEHIND IPI, THE SCHOOL POPULATION IN THE STUDY AND CONTROL SCHOOLS, AND THE RESEARCH METHODOLOGY OF THE STUDY. THE CONCLUSIONS REACHED ARE SUMMARIZED AND SOME RECOMMENDATIONS ARE OFFERED. APPENDICES INCLUDE THE MATERIALS USED TO CONDUCT THE STUDY. (JY)

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The Effect of Individually Prescribed
Instruction on the Independent Behavior
of Gifted Children in Two Schools in the
Elk Grove School District.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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DIGEST

This study was undertaken to evaluate the effect of Individually Prescribed Instruction on the independent behavior of gifted children in two schools in the Elk Grove School Distric Two additional hypotheses were formed that dealt with effective utilization of time and positive attitudes toward school. The project was funded primarily by the Illinois Department for Program Development for Gifted Children.

The project was a cooperative effort among the Elk Grove School District; the Learning and Research Development Center at the University of Pittsburgh, and Research for Better Schools, Inc. Dr. Robert Stake of the Center for Instructional Research and Curriculum Evaluation at the University of Illinois provided the model for the evaluation.

This study became an attempt to answer the following questions:

1. Is the IPI program in Elk Grove similar to the program of LRDC and RBS?

2. Do gifted children in IPI demonstrate more incidences of independent behavior than gifted children who are not exposed to IPI?

3. Are there differences in attitudes toward reading and math between IPI children and non-IPI children?

4. What do the parents think of IPI?

5. What do the teachers think of IPI?

Each IPI school was paired with a matched mean non-IPI school. The staffs of the control schools were more experienced. The results of a Denny-Brameld instrument indicated they were more discipline-oriented and less innovative than the IPI staffs.

Is IPI in Elk Grove Similar to LRDC's Conception?

We found the programs were similar in philosophy and in operation. There were differences arising from the teacher-pupil allocations and the use of planning time.

Do Gifted Children in IPI Demonstrate more Independent Behavior

An independence scale was developed from the results of a teachers' survey that asked them to describe independent and dependent acts. The similarity of responses from IPI and non-IP teachers led to the conclusion that one scale could be used for IPI and non-IPI classes. The scale that was developed excluded incidents of negative-independent acts. Positive-independent acts were defined as those acts which were acceptable to the teacher and which indicated something more than doing what was expected. Disagreements, questions about concepts or information that were not presented, and initiation of new learning tasks were considered in this category. Positive acts that were in accordance with the teachers directives were considered positive.

As we could not determine whether these acts were dependent or independent, we excluded them from the scale of independent-positive acts. They were included as incidents of effective utilization of time.

We found gifted IPI students demonstrating more independent-positive actions than gifted non-IPI students. The differences was at a level smaller than the 1 per cent chance of error. There was a trend in favor of IPI children showing more positive incidents of behavior in total. This trend was at a lower than 20 per cent level of chance.

Are There Differences in Attitudes?

Attitudinal questionnaires were given to all third, fourth, and fifth grades concerning their feeling toward reading and mat IPI children received two additional surveys that were concerned with IPI reading and IPI math.

A. Children with I.Q. scores of 120 and above:

All children had positive attitudes toward reading with no significant differences. IPI children were much more positive toward IPI reading, than toward reading in general.

Children in the gifted groups had more favorable attitudes toward math than they had toward reading. A trend favoring IPI children's attitudes toward math appeared over non-IPI children's attitudes. This was significant at less than the 15 per cent level of significance. IPI students reflected a more favorable attitude as they grew older. This did not appear to be true in the non-IPI children.

B. Children with I.Q. scores between 100 and 119:

While the IPI children had mean scores that were more favorable toward reading than the other children, no significant differences were found. The IPI children did indicate more favorable attitudes toward IPI reading than toward reading in general.

Differences were found at a level of less than 20 per cent that indicated IPI children in the middle group had more favorable attitudes toward math than non-IPI children.

C. Children with I.Q. scores below 100:

In both the IPI schools and non-IPI schools children in this group maintained favorable attitudes toward reading and math. There were no significant differences found.

What Do the Parents Think of IPI?

Parent's of all third, fourth, and fifth grade IPI students were asked to respond to a questionnaire. On almost every question the majority of parents indicated positive feelings about the program. The negative responses were small.

What Do the Teachers Think of IPI?

The staffs of the two schools strongly favor IPI. They are aware of its strengths and weaknesses. The most often heard complaints were concerned with material shortages, content difficulty, and unclear directions. The most favorable aspects were the opportunities for children to work independently, at their own pace, and on their own level.

Conclusions and Recommendations

A. The program appears to be fulfilling the objectives of increasing independent behaviors of gifted children.

A 1. There appears to be an increase in these behaviors as children mature. This trend does not appear in the control schools.

B. On the whole, IPI students indicate slightly more positive attitudes toward reading and math than do non-IPI children. These differences usually are not significant statistically.

B_1. In the majority of instances, IPI children showed more favorable attitudes toward IPI reading and IPI math than toward reading and math in general.

B_2. The factors involved in the more favorable attitudes toward IPI should be investigated. It appeared that children become less favorably disposed toward reading as they become older. The factors which lead to the more favorable attitudes toward IPI may possibly help children improve their attitudes toward reading in general.

C. Parents of children in IPI generally have positive feelings about the program.

D. The teachers are most knowledgeable about the strengths and weaknesses of the program. Time should be provided for them to employ their knowledge toward improving IPI.

E. Careful consideration should be given the slow child, and the non-selfdirecting child. A coordinated effort that employs several techniques to improve the educational opportunities for these children should be undertaken.

E. This should be extended to include experimentation with children writing their own prescriptions and making selections relative to their units of work.

F. This study should be repeated with the addition of the following: (1) Broaden the definition and scope of independence, (2) Include the teacher variable, (3) Include individual conferences with students and parents.

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CHAPTER I

INDIVIDUALLY PRESCRIBED INSTRUCTION ADOPTION RATIONALE

Preface

School District 59 is currently conducting an evaluation of the Individually Prescribed Instruction (IPI) program. This evaluation is being supported by the Illinois State Department of Program Development for Gifted Children. The major thrust of the evaluation is in the area of independence and attitudinal changes in gifted children.

District 59 is being aided in this study by the Learning and Research Development Center (LRDC) at the University of Pittsburgh, the originators of IPI; Reacarch for Better Schools (RBS), the Philadelphia regional laboratory, which is the disseminator of the program; and the Center for Instructional Research and Curriculum Evaluation (CIRCE) at the University of Illinois. The model being used in the evaluation is the creation of Dr. Robert E. Stake, Associate Director of CIRCE.

This rationale was prepared to serve two purposes:

1. To provide a basis of comparison between District 59's conception of IPI and that of LRDC and RBS. A basic question that must be answered is "Does District 59 have IPI?"
2. To supply an essential element in the evaluation model of Dr. Stake.

The efforts of many people are represented in this fifth draft of the rationale. The staffs of Brentwood and Grant Wood Schools spent many hours reading, discussing, and correcting the earlier editions. Dr. Stake, Dr. Bolvin, Dr. Scanlon, as well as many District 59 personnel, also devoted a great deal of effort to the project.

This paper contains a short history of District 59's involvement with the program, a listing of the basic philosophic positions and goals, a descriptive rationale, and the essential elements of IPI. The positions and assumptions in this paper are those of District 59 and not necessarily those of LRDC or RBS. While we assume there will be general agreement, we do anticipate differences, and possibly disagreements. This paper will be followed by one showing the areas of agreement and disagreement between District 59 and LRDC and RBS.

Completed February 16, 1968.

The decision to implement the IPI program in District 59 came as a result of assumptions, experiences, knowledge of child psychology, pedology, and expected outcomes in both student and teacher behaviors.

In the spring of 1965, members of the Brentwood staff were planning to develop an individualized reading program. The plan was to obtain scope and sequence charts from several publishers and, through examination of these charts, to develop a logically sequenced curriculum. Diagnostic tests were obtained with the expectation that we could relate them to our new curriculum. Our goal for the summer of 1965 was to develop a reading curriculum and to purchase copies of various texts that could be used to meet our specific objectives. During the year we were to develop and refine the testing program and to organize means for the individualization of instruction.

A visit to Oakleaf School in Pittsburgh and the Learning and Research Center (LRDC), University of Pittsburgh, showed us they already and logically sequenced curricula (defined in behavioral terms) in math as well as reading. In addition, they had almost complete testing programs related to the curricula and the necessary elements to individualize instruction. They were working toward the same ends we were, but they had far greater resources. They had developed a much more sophisticated program in reading and math than we could hope to do. This led to a more thorough examination of their program - and finally to its adoption.

Basic Philosophies and Goals

Our view of the total IPI program was that it was a well organized attempt to close the gap between theory and practice in education. We have talked about the needs for individualization for years. Attempts have failed for a variety of reasons - lack of adequate planning, insufficient resources to develop and improve programs, structures relying on only one person, a lack of organization, etc. We are aware that IPI was still in a developmental stage. (We need to know more about how children learn; the continuums and the materials must remain in a state of reevaluation and change; and new aspects of teacher behavior need examination.) The enormity of the problem convinced us we could not develop programs by ourselves.

We felt we were fortunate to find a program which had objectives identical with ours; that had an organization and a structure that would work; that had the resources of the LRDC - both financial and human. (Since our adoption, Research for Better Schools has become a participant, and they have strengthened the program.) When we looked at the advantages and disadvantages (including cost) we decided to adopt, for we believed IPI was a better approach to teaching children than anything else we were doing.

Specifically, we adopted the program for the following reasons and assumptions in mind:

A. Individualization of instruction was, and continues to be, a major goal of District 59. IPI individualized instruction through the use of the prescription, which took into account the child's previous skills and allowed him to work at his own rate on an appropriate level.

B. IPI fostered the identification of individual differences. This is a common goal of educators; but it is rarely met due to group needs, lack of materials, and curriculum structure.

C. IPI's organized structure and procedures provided an environment that allows for the internal and external freedom necessary to the growth and well-being of children.

D. IPI would help the child develop realistic attitudes toward school and self.

E. Increased opportunities for decision-making fostered the development of independence, self-reliance and self-initiation. For example, one assumption was that children in IPI would read more on a voluntary basis.

F. Children in the IPI program seemed to understand their own abilities and limitations in a realistic and positive sense. Self-pacing, small-step approaches, almost guaranteed success, immediate feedback, the identification procedures, and sequenced objectives are the elements that reduced frustration and encouraged the child to understand himself.

G. As the child understood himself, he would be better able to understand, accept, and respect his peers. While competition still flourished, each child selected with whom he would compete. He could choose to compete only with himself. He was no longer placed in a situation where he was forced to compete in situations where he was doomed to failure.

H. Children should know the direction and purpose of their learning experiences. In IPI children were aware of the continuum and the particular skills they were learning.

I. A failed test is often interpreted by the child in terms of total, personal failure. IPI taught him that a test is used to gather information and a failed test points out what needs to be learned. Tests, therefore, became challenges rather than inhibitors.

J. Children in IPI used their time more efficiently and more effectively.

K. Teacher behaviors were changed as clerical duties were relegated to aides; and the teacher devoted her time to diagnosis, prescription writing, and tutoring.

L. The teacher functioned as a team member who examined the children, the program, and the materials in terms of appropriateness for the child.

M. The mental and physical demands on the teachers were much greater than in most programs; however, we believed the teachers could rise to these demands.

N. Although teacher training has never been designed for diagnosing or tutoring, we believed teachers would learn through their own experiences and through the work of LRDC.

O. The continuum, a set of sequentially organized goals, raised two questions.

1. Is there a set of learning experiences that all children should go through? While our answer was no, we were willing to accept the continuum in place of other programs that take an entire group through the same objectives. The advantages out-weighed the disadvantages.
2. How good is the IPI continuum? LRDC (and now Research for Better Schools) had as one of their primary objectives the improvement of the continuum and the materials.

P. While IPI promoted decision-making by students, they were not allowed to decide on what units or skills they were to learn. Our decision rested with a "wait and see" attitude until research had more to offer about student selection of curriculum.

Q. We had serious concern about the dependent child in this program.

R. Most math curricula are spiralled and written with the express idea that children need not master a given skill. Learning "something" about the skill each time the concept reappears is the basic aim. While we agree with this goal, it becomes increasingly evident that the child feels failure, frustration, and loss of enthusiasm. IPI's mastery criterion eliminates this to a large degree. A majority of IPI children believe "I can," instead of "I can't."

S. If IPI is completely individualized, what are the effects of the loss of group interactions? Our assumption was that more group interactions would take place; but they would be student-initiated, add not teacher-initiated. Also the teacher-initiated directives were not for the entire class, but for thosewho were interested.

Descriptive Rationale

Academic Growth

The strongest determinent was a deep conviction that learning is a personaland individual experience although the phrase "individualized instruction" means many things to many people, it should mean, as a minimum, a set of learning experiences that are determined (by the teacher, or the student, or both) according to a child's needs, interests and abilities. The prescription that is written for each child in the IPI reading and math program is an attempt to bring together the child's academic needs with the available materials so that he is almost guaranteed success. This includes his demonstrated mastery of previous skills and precludes his wasting time working on materials already mastered.

In this program, the child is provided with the opportunity to work on his own level and at his own rate. While we did not know if "more" math or "more" reading, in the sense of number of topics or skills covered, would be learned under IPI, we did assume that the quality of learning would be improved. Efficiency, in a quantitative sense, may or may not be impaired. We did not adopt the program because we felt it to be more efficient in a quantitative sense. The practical and philosophic issues raised by "efficiency" should be considered.

One assumption that was made by District 59 was that the "gaps" in children's skill development would be reduced and practically eliminated by IPI. Too often children progressed through school missing certain elementary skills. These gaps occurred from absenses, different programs, changes of schools, etc. The problem in correcting this was that teachers had neither the diagnostic tools nor the flexible structure to deal with these individual problems. Their correction appeared to be inherent in IPI.

Children were aware of their progress and the direction in which they were going. They knew their achievement and what skills they had yet to learn. The curriculum ceased to be a strange, incomprehensible thing emanating from the teacher. This knowledge and sense of understanding should increase the well-being of the child, for it should lead to academic success.

Social and Personal Growth

While "individualization of instruction" was the prime determinent for adopting IPI, individualization is a means, not an end. The ends are the ways our students behave, in school and out, this year and next. We believed that IPI's structure, framework, and operations would promote and enhance independence, self-reliance, and positive attitudes toward self and school.

Suchman[1] states that internal and external freedom are necessary components in the development of autonomous individuals. The IPI framework demanded that a free environment exist. The prescribed procedure called for movement of children to gather materials and to have work corrected. Their movement could not be as closely scrutinized as usual. In this free environment children should learn to rely on themselves and gain greater confidence in themselves.

The atmosphere was non-oppressive. There were no general announcements such as "Johnny, you're wrong!" Johnny dealt with his own errors on worksheets. When he wanted help, he requested it. His errors on tests were seen only by the aide and the teacher (who then worked with him on a one-to-one basis). It seemed that a child would be more willing to say, "I don't understand", to a teacher, than to have to announce it to a whole class. The free,

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[1] J. R. Suchman, Illinois Studies in Inquiry Training - Teachers Manual (Urbana, Ill. University of Illinois Press, 1964), pp. 3-6.

The free, non-oppressive environment should lead to the development of internal freedom. Children should feel safe enough to try ideas, test their work, and develop the internal security to proceed on their own.

Leamning theory supports the concept of immediate feedback and the responsive environment. In IPI children received the data they needed to proceed almost immediately. Their tests were marked by aides as soon as the child completed them, and the students scored their own worksheets when finished. Directions for progress came from both the teacher and the child. While the teacher prescribed the activities, the child made many decisions in this program. The freedom to leave the room and gather materials also provided the freedom to leave the room and not gather them. He could ask for help, or not ask for it, when he realized he needed it. He could search for alternate solutions - student help or other materials. He decided when he was ready to take a curriculum embedded test.

Children became aware of the consequences of their decisions. The child who chose not to work, did not proceed. The child who requested a test before he was ready, failed. It is important that these decisions be made by the children, but they cannot make them totally by themselves. The teacher, through improved record keeping, was able to know the progress of each pupil. When a child was not progressing as expected, the teacher arranged a conference in which they explored and examined his progress and the reasons behind it. The child usually responded more favorably to a quiet, personalized conference than to open criticism of his actions.

The small-step approach, in which children are working in an area where they have the pre-requisite skills, but do not have mastery of the new skills, usually leads to success. Too often children go through school with the idea, "I can't." They have learned this by failing test after test and never having the opportunity to master a given set of skills. We believed that IPI could change that as the child demonstrated mastery. He might learn that his rate was slower than his classmates, or that he had to work hard to succeed, but he would learn that he can.

Frustrating experiences are no doubt inherent in life, and IPI appeared to be no exception. We knew children would face frustrations while waiting for tests to be corrected, when waiting for the teacher's help, and in dealing with the skills and concepts in the program. We did believe that the types of frustrating experiences occurring in IPI would not be as inhibiting as those faced in other programs. Frustrating experiences that block learning occur when children cannot see the goal, or they believe they can't achieve it. IPI had built-in procedures to over come this - the choice of different materials, student help, or teacher help. When a child was in a unit where he was blocked to a degree that he could not proceed, the unit was changed for him. This was done in a positive manner without any condemnation.

He was told to proceed in another unit and that he would return to the first one later. We believed that these procedures would use the positive elements of frustration to help children develop positive attitudes of determination and perseverence.

Competition, like frustration, can be an effective promoter or a total inhibitor of learning. We assumed that IPI would reduce, and practically eliminate, competition. (Our experience has shown that not to be true. There is, However, a vast difference between the competition that occurs during IPI and competition occurring in other programs. In IPI children select the children with whom they wish to compete. No longer are they forced to compete in situations where they cannot succeed. In fact, a child can withdraw from peer competition, and compete only with himself.)

We believed that the above components would lead children to more realistic understanding of themselves, They would receive accurate data in terms of academic achievement and have ample opportunities to act on their own - making decisions; initiating actions; and using themselves, not the teacher, as reference points. We assumed most children would develop positive self-concepts. The built-in success element of IPI should lead to a more positive attitude toward self. We assumed that increased opportunities to make decisions, to initiate activities, to rely on themselves, and to attempt alternate approaches would help children become independent. Included in this was the thought that they would also develop the necessary academic skills essential to functioning as independent learners. In addition, we raised the question of whether or not there were enough opportunities for children to select their own goals, another component of independence.

We also assumed that the total structure of the program and the increased feelings of self-worth, or self-confidence, would lead to strong, positive attitudes to school.

Changes in Teacher Behavior

Drastic changes in the role of the teacher were called for in the IPI program. The teacher was no longer the purveyor of information or the fountainhead of knowledge. She became a more highly skilled technician by using the available data and materials to perform her professional tasks of diagnosing, writing prescriptions and tutoring.

The program was a child-centered program and its structure led teachers to work in terms of children's needs, rather than their own. This is not to say that a teacher could not, or did not, put the group or her needs before those of her individual students, but the structure of the program minimized this. It also became evident when it occurred.

Team planning and discussion of materials, strategies, and problems were integral and valuable aspects of the program.

Before, one rarely heard teachers discussing the applicability or the quality of printed materials. In IPI this was a most common occurrence.

Teachers recognized more problems in IPI than under most programs. It became almost impossible to "lose" a child if the teacher followed procedure. Examination of test records, progress reports (weekly summary sheets), and individual tutoring provided her with a unique opportunity to get to know each child well. From this, arose recognition of many problems that too often go unnoticed. (It should be noted that IPI does not solve many of these problems; but it's bringing them to the fore, where teachers can deal with them, is a most valuable contribution.)

The teacher seemed to develop a warmer, more human relationship with the children. The individual, personal contacts help her know, accept, and respect the child. The child was able to express his fears and frustrations in a one-to-one situation, rather than making the announcement in front of the entire class. Phrases like, "I don't understand!" and "I can't get it!" were more frequent in IPI than in other approaches.

This academic program was geared to the whole child as opposed to dealing strictly with math or reading skills. Teachers focused on the child as an individual. They prescribed learning experiences and instructional settings that were geared to developing the student as an independent, capable person.

Essential Elements of IPI

A. The prescription as the most important ingredient, written for each child.

B. Team planning sessions where teachers discuss students, materials, settings, and the program.

C. Actual diagnosis of students' problems, considering academic and social factors.

D. Continual evaluation of children's progress.

E. A developmental, sequential continuum of objectives or skills. (This provides the teacher and the student the knowledge as to where the student is going and the order in which he is to progress.)

F. A complete testing program that includes diagnostic, pre, post, and curriculum-embedded tests.

G. Skills defined in behavioral terms that allow for the accurate measurement of master for each skill.

H. Development of materials that are appropriate to specific skills. (This includes multi-media materials such as work sheets, film strips, manipulative devices, and text books.)

I. Organization of materials so that the teacher can know all the available materials for a specific skill.

J. Clerical help to perform tasks ordinarily done by teachers. (Such chores were inhibiting teachers from performing professional teaching tasks.)

K. Improved record keeping (placement profiles, unit record sheets, and weekly summarries) providing the teacher with information which anables her to diagnose each child's achievement and deficiencies, and to write an appropriate prescription.

L. Seminars to provide student opportunities to work in groups, to review certain skills or concepts, and to give children a chance to talk about their work.

M. Standard teaching sequences.

CHAPTER II

COMPARISON OF IPI - ELK GROVE AND PITTSBURGH

There is no major philosophic difference between the Elk Grove IPI program and that of LRDC and RBS. Examination of the District 59 Rationals, "Evaluating Teacher Functions,"[1] and the LRDC working paper on objectives and functions to the conclusion that the goals of IPI are basically the same in Elk Grove and LRDC.

A major objective of the program is to bring to the child the most appropriate learning experience in terms of his needs, interests, and abilities. This includes both the cognitive and affective domains. The materials, techniques, and grouping patterns need to be decided for each child in each skill. If it becomes routinized and automatic, we have lost the major goal.

Therefore, much concern and attention is given to teacher behavior and the degree of mechanical prescription writing. LRDC and RBS are in the process of a major assessment in this area. Their evaluation is a formative, long-term study and no final report is ready. The examination of written prescriptions is complicated by the fact that even if a teacher does not vary her style (an indication of mechanical operation), we cannot be sure she is being mechanical.

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[1] John O. Bolvin, "Evaluating Teacher Functions." Paper presented at Aera, February 1967.

The District 59 teachers have complained about the press of time that forces automatic prescription writing. Means must be developed to alleviate this problem. In the East, floating teachers are employed to work with groups of children. This allows greater flexibility in learning situations.

Team planning time where teachers discuss the problems and strategies for individuals and small groups needs to be increased.

An RBS evaluation of placement testing indicated that some thirty children in the two schools were inaccurately placed. Clearer instructions and training materials are now ready, which should reduce the problem next year.

The Elk Grove program is an accurate representation of IPI. There are, however, operational differences and extreme caution must be used in making any generalizations from the study. This evaluation project was concerned with the program in District 59 only. We can assume differences in results occur from the addition of floating teachers, and the advantage of geographic proximity that results in more consultative services.

CHAPTER III

INDIVIDUALIZATION

The definitions of individualized instruction are many; however, they all include one working teacher, one child, planning for that individual child, and recognition and provision for different styles of learning. Differentiated assignments, varying time periods for mastery, and different materials are component rules of individualized instruction.

Inherent in individualized instruction is the need for children to be working on their own a great deal of the time. Observations made in traditional classrooms indicate that there, too, children work on their own a large portion of the time. One difference appears to be the number of assignments being worked by the students. Another variation is that generally there is more "noise" caused by student interaction and movement in IPI classes. The amount of noise varies from class to class and indicates that the teacher, and not the program, is the major factor. This particular variable was not investigated, but should be one examined in future evaluations.

Data gathered for this portion of the report came from observations, interviews, and comments from the attitudinal surveys. In two ways IPI definitely individualizes instruction - differentiated assignments and varying the periods for children.

When one walks into an IPI class and examines the materials students are working on, he rarely finds two children working on the same sheet. Occasionally, he will find children working together on manipulative materials - counters, flashcards, and games, or in peer tutoring situations. Even when several children are working on the same skill, they usually are not on the same sheet. Children do work on individual assignments.

Many children do receive the same prescription. This occurs for two major reasons. "Standard Teaching Sequences" have been developed by LRDC which prescribe a linear, sequential approach that is applicable to most children. Also, the press of time on the teacher is such that many of them have decided to attempt to reduce the amount of time they spend in writing prescriptions in order to increase their tutoring time. The area of prescriptions is being investigated and developed by both RBS and LRDC and was not covered in this study. The conclusion drawn from the above is that while many children do receive the same assignments, they do not receive them at the same time, nor must they complete them in the same length of time. Children receive the assignments individually, at a time that is academically appropriate to the child.

Children do receive individual attention on a one-to-one basis. This occurs usually when they are having difficulty. It appears that children are more willing to talk about their problems to a teacher on a one-to-one basis than to present their problems in front of the entire class. One teacher said, "IPI made me realize how difficult it is for children to stand up and say, 'I don't get it.' in front of the whole class." One draw-back to this procedure is that children have to wait until the teacher has time for them. In fact, one teacher said that one of the negative aspects of IPI was that children "can't learn the meaning of 'Wait!' They want the information now." The author appreciates the frustration of the teacher but also appreciates the desire in the student to go on with his work.

The problem of writing prescriptions that are geared to the individual children is not only limited by the time factor. The materials that have been developed for the program are more extensive than in other programs, but still they are not extensive enough. While the program makes provision for the use of texts, film strips, and manipulative devices, much needs to be done in this area. LRDC is constantly working on this problem, and it is the writer's opinion that this dearth of materials is not peculiar to IPI. It is only more apparent.

In conclusion, IPI does allow for individualized learning in terms of rate and levels. It makes gains in the areas of one-to-one relationships with the teacher; it does provide for some differentiation within assignments; and it allows and provides for individual palnning. These last three areas are under study, and improvements should be forthcoming.

CHAPTER IV

GENERAL POPULATION AND TEACHER CHARACTERISTICS

The schools used for this study were the two IPI schools - Brentwood and Grant Wood (Experimental) - and Ridge and High Ridge Knolls (Control). The major consideration for the selection of the two control schools was that they were geographically very close to the two experimental schools. The total population appears to be fairly homogeneous, and the close geographical location would tend to nullify any social-economic differences. High Ridge Knolls is located two and one-half blocks from Brentwood. The homes are generally in the same price range, and both schools are in Des Plaines, Illinois. Ridge and Grant Wood are less than two blocks apart and serve the same community, Elk Grove Village, Illinois.

A coding system has been devised to describe and symbolize the schools. "E" stands for experimental school, "C" for control. Numerical subscripts "1" and "2" identify the geographically paired schools by using the same numeral for the pair. The subscript "3" refers to the combination of data for each. "E_3" may be read as the total data for the experimental schools, grouped together.

The teacher variable always looms as a significant factor in an evaluative study. In order to assess the characteristics of the staffs, two instruments were used. The first was a simple questionnaire dealing with items as age, sex, experience, degrees, and classroom size. (See Appendix A) All four staffs are predominately female, and the majority of classes appeared to have between twenty-six and thirty children. Two of the schools, C_2 and E_2 had four classes under twenty-five. Few teachers held master's degrees, but all have bachelor's. There did not appear to be significant differences in class size, sex, or education.

Differences in both years of experience and age do appear. Slightly more than one-half of the teachers in the experimental schools have less than two years' experience (twelve out of twenty-three). In the control schools, 39 percent, have less than two years' experience (thirteen out of thirty-three). The differences are more apparent when we look at the number of teachers with more than five years' expereience. In the control schools 42 percent of the teachers have five or more years experience, but only 17 percent of the teachers in the experimental schools have that much experience.

The age of the teachers does not vary too greatly between the experimental and controls. There are 59 percent of the teachers in the control schools who are thirty and younger, while 67 percent of those in the experimental schools are under thirty. One of the control schools, C_2, has the largest percentage of young teachers. 75 percent. The two experimental schools are both in the low seventies, however; they are also similar in having the same percentages of teachers over forty.

From the general characteristics we found that the groups of teachers dffer in age and years of experience. The experimental schools had more inexperienced teachers and less teachers with five or more years of experience. The fact that C_2, had the youngest staff proportionately, further confounds the issue. The effect of these differences is not known. It can be assumed that achievement should be higher in the control schools, if we accept the adage that experienced teachers are more efficient than non-experienced teachers. In the area of independence we do not know how teacher experience affects results. The definition of independence as used in this study is closely related to behaviors that most teachers desire. We assume more-experienced teachers are able to elicit more of this type of behavior than non-experienced teachers.

This conclusion led to a modification of the scoring techniques used on the Independence Scale.

A scale developed by Dr. T. Denny and Dr. T. Brameld, "Category for Specification of Social Studies Program Objectives," (See Appendix B) was administered to the four schools. This instrument was used at the suggestion of Dr. Robert Stake. Dr. Harold Collins obtained the instrument and received permission for its use from the Connecticut Department of Education. The instrument develops two theoretical continua. One deals with teacher attitudes pertaining to change, and the other with attitudes pertaining to the purposes of classroom teaching. Questions are geared to elicit responses in the areas of innovative, moderate, and transmissive behaviors (IMT). The other continuum deals with discipline-integrity, social utilization, and humanistic (HUD) goals for the classroom.

There were thirty-six items in the intrument, with three choices for each item. The scoring procedure separated the items according to the two continuua. It should be pointed out that the Innovative-Moderate Transmissive Continuum is more of a continuum than the other. It should also be noted that no category is exclusive, and people probably responded in each. The HUD continuum is less polarized than the IMT. The humanistic teacher is the one who encourages his class to draw generalizations, or universals, from that which is studied in class. The social utilization type of teacher is the one who leads toward use. ("You'll need this in college.") The discipline-integrity teacher would be more concerned with facts. ("History for history's sake.")

This instrument was applied as it gave information concerning teachers' attitudes toward change, and it also indicated the goals for which they taught. Evaluating an innovative program such as IPI led us to believe that contributing factors to the success, or failure, of the program would be directly related to the above mentioned criteria. Had the null hypothesis been confirmed, we could assume that the teacher variable could be discounted. This was not the case.

Great variability occurred within the small groups in the "Innovative" area. The largest variability occurred between the two experimental schools. One matched pair showed no significant differences, but the other pair did. There was a significant difference between the two control schools, and one of the control schools, C_1, had a higher mean score than did one of the experimental schools, E_2. When the data were grouped together, no significant differences occurred. There were no significant differences in the transmissive category.

We may say that, while the schools differ in degree of attitude toward innovation, none of the schools is transmissive. Therefore, we concluded that while the total results appeared to be equalized, the individual variability was so great that conclusions drawn in regard to the total populations must be considered in light of these wide discrepancies.

In the teaching goal category, significant differences occurred in each area. The experimental schools were more "Humanistically" oriented, while the control schools were more "Social Utilization," and "Discipline-Integrity" oriented.

Table 1 is a summary of the mean scores of each school.

TABLE I

SCHOOL MEAN SCORES

N	Group	I	H	U	D
31	E_3	9.25	6.16	3.77	2.59
25	C_3	8.42	4.94	4.63	3.38
14	E_1	10.68	5.78	3.35	2.93
17	E_2	7.82	6.53	4.18	2.24
9	C_1	9.67	5.00	4.56	3.45
16	C_2	7.17	4.88	4.69	3.31

Table 2 gives the t-values of the totals, E_3 C_3, as well as the paired schools, E_1C_1, and E_2C_2. It also gives the comparisons of the experimental and the controls.

TABLE 2

t-VALUES

(READ IN TERMS OF LEFT-HAND SCHOOL)

	INNOVATIVE	HUMANISTIC	SOCIAL UTILIZATION	DISCIPLINE-INTEGRITY
E_3 C_3	1.985	2.380*	-2.361*	-2.036*
E_1 C_1	5.177**	1.056	-2.118*	- .814
E_2 C_2	.866	2.355*	- .915	-2.098*
E_1 E_2	15.468**	-1.092	-1.423	1.523
C_1 C_2	2.49*	.151	- .233	.196

* Significance at less than .05

** Significance at less than .01

Analysis of the above tables indicates that the two experimental schools are more humanistic in character than are the control schools. The control schools are more social-utilization and discipline oriented. These are all above the five percent level of confidence. There is no significant difference between the experimental schools in any of these three areas, nor is there between the controls. Examination of Table 1, Mean Scores, shows no cross-over in those categories. The experimental schools rank one and two in H, and three and four in S and D. This is quite different than in the B column where the experimentals rank one and three. The trends indicate that the difference in the H, U, D, colums are accented by the rankings, while they are obliterated in the I column.

The staffs of the experimental schools are less experienced younger, generally more innovative in attitude significantly more humanistic less social utilization oriented, and less discipline oriented. They would probably be more concerned with process than content. Their classroom atmosphere are probably freer than those in the control schools. No school was transmissive, and the differences probably vary more from classroom to classroom than from school to school.

These differences dictate that we cannot disregard the teacher as a variable. The degree to which it is a factor is unknown, but a follow-up study should attempt to treat this. We can anticipate higher achievement in the control schools, but we do not know how the differences affect independent behavior.

A suggestion for a follow-up study would be to have the teachers involved rate the behaviors on the scale. After the rating, observations would be done and correlated with the teachers' values, as well as between schools.

CHAPTER V

INDEPENDENT BEHAVIOR

The major hypothesis of the study was that gifted children in IPI would demonstrate higher frequencies of independent behavior than would children in traditional programs. The major problem was in the attempt to define "independent" in demonstrable, behavioral terms. The original plan was to conduct a survey of two hundred teachers, asking them to describe independent behavior.

We planned to select those behaviors which teachers most frequently described and have the items rated by another group of teachers. From this we were going to conduct an item analysis and build our instrument. Unfortunately, we were not able to pursue this plan as the responses of the teachers were not descriptive enough.

We then returned to the problem of a behavioral definition of independence. Our investigation showed that there are probably several kinds of independence - social, emotional, and intellectual. While there appears to be a dichotomy between independence and dependence, the continuum upon which it is built is quite broad, with no mutually exclusive areas. Negative independence appears often, and it is very difficult to diagnose.

We were not able to distinguish between disruptive independent acts, and disruptive dependent acts.

Certain behaviors and values appeared in the teacher survey which led to our working, limited definition of independence. As public school officials we are responsible for developing positive actions within our students. Therefore, we have limited our study to include only those acts which are positive as independent. Not all positive actions can be interpreted as independent or dependent. The child who is working dilligently may be doing so to please himself, his teacher, his parents, or even because he is afraid to do so otherwise. As we have eliminated by definition, negative behaviors, so have we eliminated the area in which a child does as he is expected.

Our instrument was developed to elicit those positive behaviors that were indications of independence. We did not employ an independent - dependent continuum. We used items that showed a student's involvement, interest, and willingness to go beyond the usual demands. Risk-takingbehavior enters as the child becomes more open to criticism when he engages in these acts. This criticism may come from the teacher or his peers.

Teacher Questionnaire - Independent Survey

The intent of the first survey (See Appendix C) was to gather teachers' perceptions of independent and dependent student behaviors defined in behavioral terms. Unfortunately, behavioral definitions occurred so rarely that a change in plan was necessitated. The procedure finally adopted was to compile the teachers' response and categorize them into general areas. From these areas the writers would develop an observational instrument. One of the inherent difficulties in tabulating an open-ended questionnaire is that the final organization is always subject to the compilers' interpretation.

Recognizing the above, the following areas emerged:

I Academics
II Children's Work-Processes
III Children's Work-Products
IV Personality Traits
V Socialization

If one were to attempt to draw definite lines between any two categories, he could engage in a study much larger than the one attempted here. Statements such as"relates concepts from one area to another" could be categorized into I or II and even possibly III or IV. The writers placed statements of this nature in Academics (I) as they appeared to be more related to children's over-all performance than to the actual operational patterns of children. Also included in Academics were statements relating to I.Q.,achievement, "work shows thought," and generalized styles of learning.

The most difficult area to categorize, and therefore, the most ambiguous, was Children's Work-Processes (II). Many teachers statements were concerned with directions, questions, teacher use of time - both teacher and student initiated - as well as the students' operational behaviors. The procedure followed in the categorization process was to delineate and distinguish the teachers' responses fairly specifically. Many responses could have fallen into two or three categories. This ambiguity led tothe development of the broad category, Children's Work-Processes.

Children's Work-Products (III) dealt with statements such as "completes work on time" and "uses his free time constructively." This was a fairly simple category, as each teacher comment described that which was produced. The major ambiguity in this section resulted from statements that related to "initiates class projects" and "does more than expected." At times, it was difficult to estimate whether the teach meant that the child did more than she anticipated, or if he just completed the task neatly and efficiently.

Personality Traits (IV) dealt with indeterminate descriptions of children that mentioned such traits as security, creativeness, self-directiveness, makes decisions, nature, and enjoys new challenges.

The final category, Socialization (V) dealt with teachers' comments that said "works well, or poorly with others," "easily or not easily distracted," and "helpful or not helpful." This area was restricted to those comments that clearly eliminated student or teacher process or product.

The general categories fell into distinct patterns. Generally, independent and dependent responses were antithetical. Occasionally, individual teachers reversed the process.

Many teachers described dependent behavior in terms of easily controllable children. One teacher listed "quietly disobeys" as an incidence of dependent behavior. Comments of this nature, i.e. those which reverse the trend, are included in the table in parentheses.

On the whole the independent responses were positive and the dependent negative. Categories such as "security" include "is secure" for independence and "is not secure" for dependence. "Works well with others" has positive comments for independent and negative for dependent. There were three comments that said the independent child did not work well with others. These are indicated by the parentheses.

TABLE 3

RESULTS OF INDEPENDENT SURVEY

	MATH				READING			
	IPI		NON-IPI		IPI		NON-IPI	
	IND.	DEP.	IND.	DEP.	IND.	DEP.	IND.	DEP.
1. Academic								
A. Achievement	4	6	14	29	3	5	13	24
B. Relates Ideas	1	2	14	5	0	1	2	4
1. Thoughtful work	3	0	17	4	3	0	8	1
Totals	8	8	48	38	6	6	23	29
II. Children's Work-Processes								
A. Directions and questions	27	36	8	6	11	5	31	14(1)
B. Style	24	7	15	11	13	10(1)	4(1)	4
1. Uses A-V materials	0	3	1	4	3	1	2	1
2. Perserveres	2	3	2	10	2	4	5(1)	7
3. Works on own	9	1	7	3	3	1	18	2
C. Teachers use of time	6	31	16	51	15	25	19	51(1)
D. Initiates	6	0	2	0	1	0	3	0
Totals	74	81	51	85	48	47	84	81

TABLE 3 con't.

	MATH				READING			
	IPI		NON-IPI		IPI		NON-IPI	
	IND.	DEP.	IND.	DEP.	IND.	DEP.	IND.	DEP.
III. Children's Work-Products								
I. Complete	3	3	17	10	3	2	6	4
II. Free time activities	6(1)	2	18(1)	3(1)	3	0	16	9
Totals	10	5	36	14	6	2	22	13
IV. Personality Traits								
A. Security	6	8	5	12	3	6	2	3
B. Motivation	8	7	14	9	16	0	28	25
C. Decision making	12	2	24	13	4	7	14	8
D. Maturity	0	2	2	4	3	4	1	5
Totals	26	19	45	38	26	17	45	41
V. Socialization								
A. Works with others	6	9	3	21	5	2	4(3)	12
B. Easily Distracted	0	3	2	2	2	1	1	3
Totals	6	12	5	23	7	3	8	15

Teachers' comments as to the type of products produced (Can you identify the work of independent and dependent students? How?) were not specific enough to use the data untreated. Their descriptions included comments such as "messy," "incomplete," and"non-creative." The following categories were established:

A. Organization - This includes comments like "uses pictures," "non-sequential," and "unorganized."

B. Language Skills - This category includes handwriting, spelling, sentence structure, etc.

C. Neatness - Neat work, messy work, erasures, etc., are included here.

D. Instructions - "Follows," "does not follow, " etc., are included here.

E. Assignments - This category includes comments such as "short answers" and "incomplete." It includes comments that describe the product in specific terms.

F. Style of product - Included here are the terms such as "dull," and "creative,"

As in the behavioral section, the independent comments were positive and the dependent negative. For the purpose of organization the categories cover both. Table 4 should be interpreted in this manner. Comments that reversed the general trend are included in parentheses. "Too neat" for a dependent child's work is one such example.

INDEPENDENT - DEPENDENT WORK PRODUCTS

		MATH				READING			
		IPI		non-IPI		IPI		non-IPI	
		IND.	DEP.	IND.	DEP.	IND.	DEP.	IND.	DEP.
I.	Organization	3	2	9	10	4	4	12	8
II.	Language Skills	4	0	7	6	4	6	4	5
III.	Neatness	5	2	8(1)	7	3	3	11	11(1)
IV.	Instructions	2	8	8	5	2	3	1	4
V.	Assignments	11	12	18(1)	23	3	5	23	24
VI.	Style of Product	8(1)	6(2)	22	11	11	4	28	16

Questions 6-15 were included to determine whether or not there were district differences between IPI teachers and non-IPI teachers. Questions 6 - 9 dealt with teachers' attitudes toward independence.

The remaining questions asked teachers to react to incidents of student behavior and to select which child's behavior was more independent. Also, they were asked whether or not the choice was hard to make.

TABLE 5

TEACHERS' ATTITUDES
ABOUT INDEPENDENCE

6. Importance for children

	Very Important 1	2	3	4	Not Important 5
IPI Reading (N=22)	13.50	5	2.50	0	1
IPI Math (N=25)	13	9	2	0	0
NON-IPI Reading (N=46)	21	16	5	1	0
NON-IPI Math (N=43)	11	20	11	0	1

7. Extent of independence as a teaching goal

	Major 1	2	3	4	Not a Goal 5
IPI - Read	14	6	1	0	0
IPI - Math	18	4	2	0	1
NON-IPI Reading	23	17	4	0	0
NON-IPI Math	13	21	9	0	0

8. Are independent children happier?

	Very Much Happier 1	2	3	4	Not nearly as happy 5
IPI - Reading	9	7	3	0	0
IPI - Math	12	7	2	1	0
NON-IPI Reading	20	18	2	1	0
NON-IPI Math	10	27	5	0	1

9. Are independent children harder to teach?

	Much harder 1	2	3	4	Much Easier 5
IPI - Reading	3	2	1	10	5
IPI - Math	.50	8	3	7	5.50
NON-IPI Reading	2	7	2	13	17
NON-IPI Math	4	7	3	22	5

The similarity of responses led us to the conclusion that IPI and non-IPI teachers generally felt the same about independence. The teachers agreed that independence was important, should be one of their goals, and led to happier children. There was more variance when it came to the question of whether or not inddpendent children are harder to teach. The majority of teachers did feel independent children were easier to taach.

Table 6 illustrates the teachers' responses in selecting independent actions. Here too, there was much similarity in all groups. Question 14 had the widest discrepancy, but, inasmuch as the purpose of the questionnaire was to lead to the development of an instrument, it was decided that no statistical techniques be applied. (Table 6 presented on the following page.)

The conclusions drawn from the questionnaire were:

1. There were not enough examples in behavioral terms to form a new instrument.

2. The broad categories would determine the areas from which specific items would be drawn for the new instrument.

3. There was sufficient similarity in the responses of IPI and non-IPI teachers to assume one instrument could be developed for IPI and non-IPI children.

4. The instrument to be developed would include the general categories, but it would be developed specifically to fit the District 59 situation.

Instrument Development

Our broad definition of an independent child is one who usually asks questions and makes comments about considerations that were not covered in class. He makes statements that may disagree with the group, or he offers

TABLE 6

TEACHER SELECTIONS OF MORE INDEPENDENT BEHAVIOR

	1st Person	2nd Person	Equal	Easy	Hard
10.					
IPI Reading	3	10	9	12	10
IPI Math	2	15	7	16	7
Non-IPI Reading	2	25	16	25	17
Non-IPI Math	1	29	10	25	15
11.					
IPI Reading	0	20	1	18	3
IPI Math	0	20	5	17	8
Non-IPI Reading	2	40	2	38	7
Non-IPI Math	0	38	3	37	4
12.					
IPI Reading	13	5	2	14	8
IPI Math	15	6	2	20	5
Non-IPI Reading	18	17	5	23	17
Non-IPI Math	15	21	6	31	11
13.					
IPI Reading	16	0	4	15	4
IPI Math	24	2	4	18	6
Non-IPI Reading	29	6	7	32	6
Non-IPI Math	31	5	6	32	10
14.					
IPI Reading	6	7	9	10	10
IPI Math	3	10	10	18	5
Non-IPI Reading	7	18	19	30	14
Non-IPI Math	18	19	12	28	15
15.					
IPI Reading	15	4	3	10	12
IPI Math	14	2	9	11	14
Non-IPI Reading	24	5	11	25	16
Non-IPI Math	27	5	8	33	7

new ideas and insights to the discussion. There is relatively little along the lines of "See me, please." or "Praise me." He is willing to face criticism in order to achieve his aims.

The instrument (See Appendix D.) was built around the questions, comments, responses, and work habits of the child. A fifth category was added that included self-initiated activities of the child. Category six, "Security Building," was established in order to simplify the observation techniques. In the original draft this classification appeared in so many categories it was decided to group all of these behaviors in one category.

I. Questions asked by students. This section pertains only to questions initiated by the student. A question that followed a question or comment by the teacher was entered in the "Response to Teacher" section. Questions by the student in response to a fellow student's question or comments were classified as "Comments Made by Student."

This category was sub-divided into three parts:

A. Instructions and Directions

B. Content

C. Non-Pertinent

Each of these sub-sections has an independent component; and another which may or may not be independent in nature, and therefore excluded.

The area of "Non-Pertinent" was divided into positive and negative sections. Questions that appeared to be of a disruptive nature or those whose intent appeared to be one of "getting the group off the track" were entered as negative. A sincere question that was not directly related to the subject was entered as positive, or independent.

II. Comments made by the student. These are comments initiated by the student and do not include those in response to the teacher. As mentioned above, these included responses to the teacher as well as those in response to a fellow student.

1. Reiterations - These are the direct repeat statements. No new information is given.

2. Clarifications, extensions - These are the supportative type comments that can explain or even bring in new ideas.

3. Disruptive - Any type of comment whose purpose appeared to be other than continuing the general direction are included here. A comment of disagreement that appeared ingenuine or insincere belongs here.

4. Appropriate disagreement - These are the honest,

genuine disagreements that further group direction.

Items two and four are included as independent acts. Item one belongs in the non-independent area, and item four in the negative behavior class.

III. Responses to teachers. The two main divisions are those responses which are volunteered and those which were directed by the teacher. In these cases we used the very general categories of appropriate and disruptive. While all appropriate remarks were considered positive, they did not distinguish the independent actions. Following our general definition, we separated the appropriate responses into convergent and divergent. These terms were interpreted in a broad sense to include expected, factual, content descriptive remarks in the convergent area, and inferential, creative, broadening type remarks, in the divergent.

IV. Working on own. This attempted to assess the student in his work habits. It really related to the time the child was doing what he was expected to do - whether it was listening to the teacher, working alone, or working in a small group.

Two of the four sub-topics were considered positive and two negative. This area was included in order to account for the child's actions during the observation period and to provide data related to the corollary hypothesis that gifted children in IPI commit a greater frequency of behavior related to effective utilization of time than do gifted children in regular programs. Effective utilization of time was limited to include those areas defined above as positive.

V. Student Initiates. This section was concerned with activities that the student started on his own. It included new projects, group functions, use of different materials or resources, and positive help to or from another student. We included those incidents that were directed by the teacher, as it appeared the child had a choice to do, or not to do, them with little risk. When a teacher made the statement, "After you finish your math, take out your reading.", and the child took out his reading, or some other appropriate activity, he received a tally in V-A. - New Projects.

VI. Security Building. This final section included all remarks, comments, and non-verbal indications that were appeals for recognition, praise, and encouragement. It also included the "teacher pleasing" actions. There is no subdivision in this category as it is a part of all the above.

The scoring of the instrument was on a cumulative basis. Our concept of independence is that it is many faceted and, therefore, there will be many different indications of it.

Observation Techniques

The criterion measure we adopted to determine giftedness was an I.Q. score of 120 and above. While we wanted to limit the sample to academically talented youngsters, we preferred not to reduce the group by allowing achievement and teacher judgments to interfere. This procedure also permitted us to examine the profiles of some bright children who are under-achievers.

All children (in each of the four schools) who where in grades, three, four, and five, and who had appropriate I.Q. scores were included in the sample. Each child had been in his school the preceding year. The children in Brentwood and Grant Wood had been in IPI for two years. (Unfortunately, no I.Q. scores were available for second graders. It would have been interesting to see if differences occurred in children who had no exposure to different programs.)

All observers discussed the instrument in detail before any observations were made. Trial observations were conducted in a school that was not included in the study until a high degree of consistency was achieved. One grade level at a time was observed. The observers worked together as a team concentrating on one child at a time. A period of five minutes was devoted to each child. As soon as one class was exhausted, they moved to another. While this may have had some confounding effects in terms of time of observation, the compilation of grade level results should have equalized this. Unfortunately, grade level results obliterated differences in individual classrooms.

The time interval on each tally was fifteen seconds, and the tallies were entered as consecutive numerals for clarification and consistency. If disagreement occurred, an immediate conference was held. If no agreement could be reached, the tally was to have been eliminated, and an additional tally would be recorded. We did not need any additional tallies.

The degree of consistency was so high that a change in procedure was instituted half-way through the observations. Only one person observed one child. Whenever the observer faced a situation in which he was not sure of the appropriate tally, he noted the situation and it was discussed with the observation team. Each time this arose, the observer remained with the child and took enough additional tallies to compensate for those in question. If the question could not be resolved, it was to have been eliminated and the new tally counted. This occurred only once.

If this study is to be repeated, the number of observations of each child should be increased. This would afford a more representative sample. Also, the observers felt that the degree of positive behaviors probably was affected by the presence of the observers. If several observations were made, the children would soon tend to ignore observers.

The five-minute period, with a tally every fifteen seconds, seemed appropriate. It was a long enough period to watch a child, and the fifteen second interval allowed the observer to consider his tallies. The repeated observations could be done over a period of several months, and these scores could be compared with each other to see if seasonal changes occurred.

The repeated observations could generate enough data so that individual teachers and classroom atmosphere could be included as variables. With the small sample used in this study, grade level groups, and even total school populations of gifted children, were necessary.

In order to increase our numbers, we had to assume the differences in teachers would not affect the total results.

Scoring and Results

The data from the observations was scored on two continua. The first dealt with the effective utilization of time, and the tallies were scored as positive or negative. The items that were considered negative were those entered in I-C-2(Negative), II-C(Disruptive), III-A and III-B(Disruptive), V-C(Looks around), and V-D(Disruptive). All other items were considered positive. Table 7 gives the percentage of scores, and Table 8 tells the numbers of students included.

TABLE 7

Percentage of Positive Tallies

School	E_1	C_1	E_2	C_2	E_3	C_3
Grade 3	.89	.30*	.87	.84	.89	.81*
Grade 4	.77	.81	.85	.83	.79	.81
Grade 5	.90	.85	.82	.84	.87	.84
Totals	.85	.73*	.85	.84	.85	.82**

*Chi-square value significant at less than .01
**Chi-square value significant at less than .10

TABLE 8

Number of Students

School	E_1	C_1	E_2	C_2	E_3	C_3
Grade 3	9	1	6	14	15	20
Grade 4	8	4	2	15	10	19
Grade 5	5	3	4	19	8	23
Totals	22	8	12	48	33	62

Examination of the above tables indicates that there is a trend that favors the experimental schools. Caution must be exercised when reading the tables, as the low number of children affects the totals. This is especially true in the case of Grade 3 at C_1. One child represents the entire population of third-grade gifted students at that school. (The observer added this comment to his record, "Good kid. Really fighting the system.") When that child is included in a grade level group from both control schools, his extreme score has less effect on the total mean. Just as we can have more confidence in a total grade level group, we can have more when we combine the entire number of gifted children in the IPI schools and compare them to the entire number of gifted children in the non-IPI schools.

For the purpose of this investigation, the level of significance was established as follows:

.20 Trend toward significance
.10 Strong trend toward significance
.05 Significant
.01 Highly Significant

These levels will be maintained in the investigations of attitudes in the next chapter.

Chi-squares were obtained for each of the pairs. The chi-square values were obtained by using frequency scores. Yates' correction was used when the frequency was less than ten. The only two scores that had a significance at less than the .01 level were the E_1C_1 Totals and the E_3C_3 grade-three Totals. The one child in C_1 represented 12.5 per cent of the E_1C_1 Total, and 5 per cent of the E_3C_3 Total in third grade. This was a boy who disrupted four out of five minutes he was observed. It does appear that the gifted third-graders in IPI do exhibit frequencies of behaviors related to effective use of time. There is a reversal in fourth grade, which is not statistically significant. In fact, there are only two percentage points separating the means.

When we inspect the total populations, we find that a difference does exist. Statistically, the difference is significant at less than the 10 per cent level. With the probability of chance operating less than 10 per cent of the time, we can say that, if not significant, there is a strong trend favoring IPI.

The term "non-independent" in the rest of this report is used in the strict sense of meaning "not manifesting independence." Actions described as non-independent may or may not be indicators of independence or dependence. Our concern was to compare independent acts between the two groups of children. We have isolated those acts which appear to be good indicators.

The closeness of the positive-negative comparison cited above led us to assume that whatever acts of independence were lost in our survey would be equally distributed in the four schools. In fact, it would appear the IPI children would probably receive a larger proportion, as their composite mean scores of positive behaviors were higher in grades three, five and the total population.

The items that were considered as independent acts were questions that were about instructions not previously given (I-A-2). Not the kind of, "Did you say page sixteen?", but "May I go on to the next page?", or "May I do this instead?". Positive, non-pertinent (I-C-2) showing involvement and inferential (I-B-2) questions were also considered independent. Student comments or responses that were clarifications (II-B),appropriate disagreement (II-D), and appropriate divergent (III-A-1-D) and (III-B-2-D) were included in this category, as was all of section "V" Student Initiates." Table 9 presents the percentage of incidents that were tallied as independent. Table 10 gives the number of students and the Chi-square values for the pairs.

IPI children demonstrated greater frequencies of independent behaviors than did the children in regular programs. Significant differences at less than the .01 level of chance occurred in all grade levels when we used composite groups. The total population of gifted children in the IPI schools demonstrated the same degree of significance when compared to their geographically paired school. When we compare school to school, grade level to grade level, and total groups to total groups, we find only three cases where the probability of chance is greater than .01. In one case, E_1C_1 grade three, the possibility is less than .20; and in the two other cases, E_1C_1 and E_2C_2 grade four, the possibility is less than .10. In each case the percentage of the IPI schools is higher. In the fifth-grade comparisons, all results are significant at less than the .01 level.

TABLE 9

Percentage of Independent Tallies

School	E_1	C_1	E_2	C_2	E_3	C_3
Grade 3	.16	.00	.14	.01	.15	.01
Grade 4	.22	.11	.13	.05	.20	.06
Grade 5	.35	.04	.15	.03	.28	.03
Totals	.23	.07	.14	.03	.19	.03

TABLE 10

Chi-Square Values[1] and Number of Students

School	E_1	C_1	E_2	C_2	E_3	C_3
Grade 3						
N	9	1	6	14	15	20
Chi-Square	2.58*		30.69***		41.87***	
Grade 4						
N	8	4	2	15	10	19
Chi-Square	3.34**		2.75**		26.33***	
Grade 5						
N	5	3	4	19	8	23
Chi-Square	24.22***		14.82***		83.73***	
Totals						
N	22	8	12	48	33	62
Chi-Square	21.79***		53.15***		130.16***	

[1] Yates' correction used with frequencies less than ten.

*Chi-Square Value Significant at less than .20.

**Chi-Square Value significant at less than .10.

***Chi-Square Value significant at less than .01.

A very important trend shows this percentage increases from grade three to grade five. While it is not as clearly identified in E_2, the total population, E_3, illustrates it clearly. If age was the major factor, we could assume the trend would appear in the control schools. It does not. In fact, there is a reversal, or decrease, in this type of behavior in the control schools. The older children in the IPI schools engage in and demonstrate more incidents of positive, independent behavior than the younger children in the IPI schools demonstrate - more of this behavior than the older children in the regular programs.

CHAPTER VI

ATTITUDINAL SURVEYS

One of the functions of this descriptive evaluation was to ascertain the attitudes of the people involved in and affected by IPI. One of the corollary hypotheses stated that IPI children would have more positive attitudes to self and to learning than would children in other programs.

We were not oble to treat the children's attitudes as fully as we would have liked; but, with the kind help of Dr. Mary Huser, Illinois State University, we were able to use attitudinal surveys in reading and math.

Parents of children in IPI and IPI teachers were asked to describe their feelings and thoughts about IPI. A series of randomly selected teachers was interviewed to compare their feelings and the feelings indicated by the surveys.

Children's Surveys

The four surveys used in connection with the children were derived from some that were created by Dr. Huser. Frm Dr. Huser's "General Reading Survey" came ours. We deleted some questions from her reading questionnaire.

Then we changed "reading" to "math," deleted some more questions, and had a math survey as well. (See Appendix E.) Dr. Huser also sent us an "Individualized Reading Survey." "Individualized" became "IPI", "reading" became "math," and we had an "IPI Reading Survey" and an "IPI Math Survey." (See Appendix F.)

As with the independent scale, we used a criterion of an I.Q. score of 120 and above. We did differ in the procedure by including all children - grades three, four and five - in each of the four schools. While the surveys were identical, they were coded in a way to give us three distinct groups. The first group was children with I.Q.'s of 120 and up. The second included children whose I.Q.'s ranged from 100 to 119. The last group had I.Q.'s of 99 and below.

The main consideration for including the other groups was that the information was easy to gather. Group two, however, does represent a group of talented achievers with average class percentiles around eighty-five. The object was to compare the results from E_1 and E_2 with C_1 and C_2 to see if any significant differences in attitudes existed.

The scoring procedures were the same for each set of inventories. Item mean scores were obtained for each class, each grade level, each school, the IPI schools, and the control schools. From each of these mean scores another mean was derived. In effect, we used the item mean scores as our raw data. This enabled us to examine the group mean scores in several ways. Our N's remained constant within each instrument by using item means.

The children had four possible choices for each item: A - Agree, UA - Usually Agree, UD - Usually Disagree, and D - Disagree. Several teachers suggested a modification of the symbols for they confused many children. (One child headed the columns on his survey sheet "Hot," "Warm," "Cool," "Cold,")

A four point scale was used with one representing the most positive attitude and four the most negative. Statements that were worded negatively were scored inversely. The range of positive attitudes was from 1 to 2.4. 2.5 was considered neutral. The negative range was from 2.6 to 4.

The intent of the surveys was to ask obvious, and not so obvious, questions about reading and math. While we thought the total means would be increased by asking the less obvious questions, we believed we would receive a more honest picture of the children's attitudes. It appeared that we deleted too many of these questions in the general math survey and that this questionnaire was too obvious. Also, teachers stated that their children became confused and responsed in a different manner than they inteded. We assumed that this would be the same in each school and would not affect our totals.

Two major problems arose in our procedures. The small number of gifted children in some classes and the great variability between classes in the same schools led us to deal with grade level groups, total school populations, and IPI combined population.

In order to simplify the report, the gifted children will be designated as Group I; the group with an I.Q. range from 100 to 119 as Group II; and those below 100 will be Group III. Each group will be reported on separately.

Group One

Table 11 is the mean scores generated by Group One.

TABLE 11

Mean Scores for Reading Survey - Group One

	E_1	C_1	E_2	C_2	E_3	C_3
Grade 3	1.97	1.75[2]	1.37	2.47*	1.82	2.41
Grade 4	2.43	1.92	2.56	1.72*	2.45	1.69
Grade 5	1.94	1.83	2.63	2.10	2.12	2.06
Totals	2.10	1.88	2.14	2.07	2.11	2.04

[1] N = 8 items

[2] All standard deviations were less than 1.0 except this one. This was 1.30. C_1 in this case was represented by one child.

We may say that all four schools have a somewhat favorable attitude toward reading. The IPI fourth-graders have a mean score that is just slightly on the favorable side. The fourth and fifth grades at E_2 actually cross over to the negative side. This is very different from their third grade which has the most favorable attitude of any grade level in the four schools.

When we combine the IPI children by grade level and compare their mean scores to those of the control group, we find no significant differences in the fifth grade or the total group. In the fourth grade, we have a t-value of 2.77 which is significant at less than the .05 level and is favorable to the control schools. The third grade t-value is 2.31, also significant at less than the .05 level, but in favor of the IPI schools.

When we obtain t-values for E_1 C_1, E_2 C_2, E_1 E_2, C_1 C_2, and E_3 C_3, at all grade levels and totals, we find only two more values that are significant at less than the .05 level. These are from grades three and four E_3 C_2 and these also reverse. The great degree of variability and the frequent reversals prohibit the discovery of trends. We cannot say that gifted children in IPI have more favorable attitudes toward reading than children in regular programs according to the results of this survey.

The children at the IPI schools also took an attitudinal survey on IPI reading. (See Appendix H.) The results of this were quite different. They are listed in the table below, along with the mean scores on the Reading Survey (See Appendix F.)

TABLE 12

Mean Scores from IPI Reading Survey
and Reading Survey[1] - Group One

	E_1		E_2		E_3	
	IPI READ.	READ.	IPI READ.	READ.	IPI READ.	READ.
Grade 3	1.74	1.97	1.83	1.37	1.78	1.82
Grade 4	1.28	2.43	1.45	2.56	1.33	2.45
Grade 5	1.66	1.94	1.27	2.63	1.53	2.12
Total	1.57	2.10	1.61	2.14	1.58	2.11

[1] All standard deviations were less than 1.00.

[2] N = 10 items

[3] N = 8 items

The examination of the table led us to the conclusion that IPI children have a much more favorable attitude toward IPI reading than they do toward reading in general. A follow-up study should attempt to distinguish what parts of the program they prefer, and what makes their attitudes

[illegible]

so different. The t-value between the entire group's attitude toward IPI and its attitude toward reading in general was 2.71, which is significant at less than the .05 level.

In only one case is the mean from the reading survey less than the one from the IPI survey. Even there, the total IPI mean is less than the other. The t-value derived from the third grade is the only one that is not significant. The fourth grade t-value is 4.93, significant at less than .01; and the fifth's 2.48 is significant at less than .05.

Group I's mean scores on the math attitudinal survey were lower than their reading means. Table 13 gives the math means.

TABLE 13

Mean Scores for Math
Survey[1] - Group One

	E_1	C_1	E_2	C_2	E_3	C_3
Grade 3	1.55	1.00	2.20	1.52	1.75	1.38
Grade 4	1.83	1.65	1.00	1.81	1.66	1.78
Grade 5	1.50	1.80	1.27	2.25	1.42	2.18
Total	1.63	1.63	1.58	1.86	1.55	1.82

[1] N = 5 items

[2] All standard deviations less than 1.00.

The table indicates that children in the four schools have a more favorable attitude toward math than they have toward reading. This is suspect, as the items on the math test were more obvious than the reading and possibly would not elicit feelings in the "gray areas. The third greaders in the regular classes have a more favorable attitude than do the IPI children. This reverses in fourth grade and becomes more pronounced in the fifth. The t-values reflect this as shown in the following table.

TABLE 14

t-Values from Math Survey[1] - Group One

	E_1C_1	E_2C_2	E_3C_3
Grade 3	-3.64[2]	-5.10****	-2.20**
Grade 4	- .72	5.39****	.70
Grade 5	.80	4.80****	2.70***
Totals	0.00	1.82*	1.33*

[1] N = 10 items

[2] Minus sign indicates in favor of non-IPI.

* Significant at less than .15
** Significant at less than .10
*** Significant at less than .05
**** Significant at less than .01

While significant differences favoring the regular classes exists in third grade, fourth grade shows a decline. By fifth grade the IPI children show definite significant and more positive attitudes toward math.

The following table compares the IPI children's mean scores on the IPI Math Survey to the General Math Survey.

TABLE 15

Mean Scores from IPI Math[1] and
Math Survey[2] - Group One

	E$_1$		E$_2$		E$_3$	
	IPI MATH	MATH	IPI MATH	MATH	IPI MATH	MATH
Grade 3	1.37[3]	1.55	1.84	2.20	1.53	1.75
Grade 4	1.81	1.83	1.15	1.00	1.67	1.66
Grade 5	1.42	1.50	1.10	1.27	1.31	1.42
Total	1.52	1.60	1.48	1.58	1.51	1.55

[1] N = 10 items

[2] N = 8 items

[3] All standard deviations less than 1.00

No significant t-values were derived from the above. The broadest range in the E$_3$ column came from Grade 3. This derived a t-value of 1.27 which is not significant. The mean scores do illustrate a consistent pattern that indicates a more favorable attitude to IPI math than to math in general. This would tend to confirm the trend observed from the means table that IPI children do develop more favorable attitudes toward math as they grow older. This appears to be the reversal of the control children, as their attitude becomes less favorable as they grow older.

Group Two

The children in group two were given the same questionnaires as those in group one. Table 16 is their mean scores from the reading survey.

TABLE 16

Mean Scores from the Reading Survey[1] - Group Two

	E_1	C_1	E_2	C_2	E_3	C_3
Grade 3	1.90	2.14	1.92	2.17	1.91	2.16
Grade 4	1.95	2.11	2.02	2.26	1.98	2.22
Grade 5	2.47	2.22	1.92	2.48	2.31	2.40
Total	2.05	2.14	1.96	2.20	2.02	2.24

[1] N = 8 items

[2] All standard deviations less than 1.00.

There is a somewhat disturbing trend in the totals of all children in the four schools. As they become older their attitudes toward reading become less favorable. The differences are not significant between the groups. None of the t-values approached significance. While we cannot say that there is a significant difference between IPI children's attitudes toward [illegible] and non-IPI children's, there is a consistent pattern whereby the IPI means are more favorable than the others. There is only one reversal of this, which occurs at the fifth grade in E_1 C_1.

We also obtained t-values for comparisons between E_1 E_2, and C_1 C_2. Here we also found no significance. In the fifth grade E_1 E_2 sample a value of 2.00 was obtained which is significant at less than the .10 level but this was the only significant value obtained. Therefore, we conclude that children in group two in the four schools have a generally favorable attitude toward reading, although it is slightly less favorable than the children of group one. The IPI children have a slightly more favorable attitude than do the others.

We find the same pattern when we compare the IPI students' attitudes toward reading and toward IPI reading. As with Group I, they have more favorable attitudes toward IPI reading than they do toward reading.

TABLE 17

Mean Scores from IPI Reading Survey[1]
and Reading Survey[2] - Group Two

	E_1		E_2		E_3	
	IPI Read.	Read	IPI Read.	Read	IPI Read.	Read.
Grade 3	1.77	1.90	1.52	1.92	1.66	1.91
Grade 4	1.69	1.95	1.66	2.02	1.68	1.98
Grade 5	2.00	2.47	1.58	1.94	1.88	2.31
Total	1.81	2.05	1.60	1.96	1.73	2.02

[1] N = 10 items

[2] N = 8 items

[3] All standard deviations less than 1.00.

The differences again are general and not significant, but they are consistently in favor of IPI. The E_3 fifth grade derived a t-value of 1.70 which is significant at less than the .10 level; and, by the established levels for this investigation, can be defined as a strong trend. No other values indicated significance. While this does not appear to be a reversal of the trend discussed above (in which the children develop less favorable attitudes toward reading as they become older), it at least appears to slow it down. This should be investigated further. If IPI can help children reverse this apparently negative trend, it will provide a great service.

TABLE 18

Mean Scores from Math Survey[1] - Group Two

	E_1	C_1	E_2	C_2	E_3	C_3
Grade 3	1.53[2]	1.55	1.42	1.72	1.47	1.67
Grade 4	1.75	2.59	1.82	1.98	1.78	2.17
Grade 5	1.85	2.05	1.46	2.06	1.73	2.06
Total	1.82	2.07	1.57	1.91	1.70	1.79

[1] N = 5 items

[2] All Standard Deviations less than 1.00.

There is a consistent pattern whereby the mean scores of the IPI children are lower than the means of the non-IPI children. Tests of significance were obtained.

From the above two tables we notice that the variability is quite small between the two IPI schools. Variability between the two non-IPI schools is also quite small. Individual instances of significance occur, but they appear to diminish when we group the children together. Somewhat more significance can be given to these cases as the number of children was larger. Even so, it would be preferable to continue to use group totals. We see a trend toward more positive attitudes on the part of the IPI children.

TABLE 19

t-Values from Math Means[1]- Group Two

	E_1 C_1	E_2 C_2	E_3 C_3	E_1 E_2	C_1 C_2
Grade 3	.10	1.70**	1.47**	.78	.73
Grade 4	3.37****	.64	1.66**	.32	2.22**
Grade 5	.75	2.72***	1.23*	1.57**	.04
Total	1.07*	1.69**	1.30*	1.23*	.68

[1] N = 20 items

* Significance at less than the .20 level
** Significance at less than the .10 level
*** Significance at less than the .05 level
**** Significance at less than the .01 level

We find that this group of IPI children did not show the same decreased mean scores on the IPI math survey as did the children in group one. In fact, in Table 20, the Column of E_3 shows a higher mean in two instances. One of those is only a difference of .01 and should be considered as equal.

In both cases, the children show a definite, positive attitude toward math. Whether they separate math and IPI math, as it appears they do in reading, is unknown. The children of the four schools all appear to have favorable attitudes toward math, and there does not appear to be any significant difference.

TABLE 20

Mean Scores from IPI Math[1] and Math[2] Surveys - Group Two

	E_1		E_2		E_3	
	IPI Math	Math	IPI Math	Math.	IPI Math	Math
Grade 3	1.72[3]	1.53	1.54	1.42	1.54	1.47
Grade 4	1.73	1.75	1.76	1.82	1.74	1.78
Grade 5	1.66	1.85	1.50	1.46	1.62	1.73
Total	1.77	1.82	1.64	1.57	1.72	1.71

[1] N = 10 items

[2] N = 8 items

[3] All standard deviations less than 1.00.

Group Three

The children in this group received the same treatment as those in the other two groups. Their results are included in the following table (Table 21 to be found on next page).

There were two incidences in which control children indicated a more favorable attitude toward reading than did IPI children. These both occurred at the fifth grade level in E_1 C_1 and E_3 C_3. Their corresponding t-values were 1.94 and 1.42, both indicating a strong trend, as the level of significance is less than .10. The children in the four schools maintain a positive attitude toward reading, but as in the case of the group two children, the attitudes become more negative as the children become older. This is to be expected in this group of lower I.Q. children, but it means we must do something about it.

TABLE 21

Mean Scores from the Reading Survey[1]

	E_1	C_1	E_2	C_2	E_3	C_3
Grade 3	1.90[2]	2.05	1.78	2.10	1.88	2.07
Grade 4	2.07	2.35	1.72	1.95	2.00	2.19
Grade 5	2.98	2.25	2.31	2.39	2.83	2.36
Total	2.10	2.16	1.81	2.12	2.02	2.14

[1] N = 8 items

[2] All standard deviations less than 1.00.

The results of the IPI attitudinal survey again show that IPI children favor IPI reading more than reading in general.

There was only one significant t-value derived from the totals. This occurred in the fifth grade. The t-value of 6.12 is significant at less than the .01 level of confidence.

We conclude that, although the IPI children's attitude toward reading is about as favorable as the control children's, there is a serious differences in the fifth grades in favor of the controls. The fifth grade IPI children have a much more favorable attitude toward IPI reading than toward reading in general. We should find what causes these differences and capitalize on those favorable components.

TABLE 22

Mean Scores from IPI Reading[1] and Reading Surveys[2] - Group Three

	E_1^3		E_2		E_3	
	IPI Read.	Read.	IPI Read.	Read.	IPI Read.	Read.
Grade 3	1.92	1.90	1.42	1.78	1.81	1.88
Grade 4	1.86	2.07	1.65	1.72	1.78	2.00
Grade 5	1.95	2.98	1.60	2.31	1.83	2.83
Total	1.91	2.10	1.56	1.81	1.80	2.02

[1] N = 10 items

[2] N = 8 items

[3] All standard deviations less than 1.00.

Group three children's mean scores on the math survey are included in Table 23. The appropriate t-values are given in Table 24.

TABLE 23

Mean Scores from Math Survey[1] - Group Three

	E_1[2]	C_1	E_2	C_2	E_3	C_3
Grade 3	1.79	2.04	1.98	1.36	1.84	1.67
Grade 4	1.71	2.03	1.18	2.30	1.51*	2.16
Grade 5	1.66	1.00	1.50	2.00	1.63	1.86
Total	1.74	2.01	1.59	1.61	1.70	1.79

[1] N = 5 items

[2] All standard deviations less than 1.00.

TABLE 24

t-Values from Math Survey[1] - Group Three

	E_1 C_1[2]	E_2 C_2[3]	E_3 C_3	E_1 E_2	C_1 C_1
Grade 3	1.03*	-3.14	- .67	1.01*	2.71**
Grade 4	1.27*	6.69***	3.96***	4.94***	.96
Grade 5	-4.21***	.98*	.88	3.80	2.96**
Total	1.21*	.12	.49	.97*	1.70*

[1] N = 20

[2] All standard deviations less than 1.00.

[3] Minus sign indicates in favor of controls.

*Significant at less than .20
**Significant at less than .05
***Significant at less than .01

The large variability that occurs between schools and grade levels indicates that there are many factors at work to confound our results. We see that the E_3C_3 third grades show the non-IPI children as having the more favorable attitude. This reverses in fourth grade, even to a significance at less than the .01 level. The trend is maintained in fifth grade; but the significance is lost, as it is in the total. There appears to be no significant difference between the children in their attitudes toward math.

TABLE 25

Mean Scores from IPI Math Survey[1]
and Math Survey[2] - Group Three

	E_1		E_2		E_3	
	IPI Math	Math	IPI Math	Math	IPI Math	Math
Grade 3	1.98[3]	1.79	1.79	1.98	1.93	1.84
Grade 4	1.68	1.71	1.40	1.18	1.57	1.51
Grade 5	1.95	1.66	1.20	1.50	1.77	1.63
Totals	1.89	1.74	1.62	1.59	1.81	1.70

[1] N = 10 items

[2] N = 8 items

[3] All Standard Deviations less than 1.00.

The differences were not significant and could be attributed to chance. There were no significant t-values in the E_3 column. The differences in the means were so slight that we can say there is no significant difference between the attitudes of the IPI children and the non-IPI children.

This group was the only one to show a consistent pattern - preferring math to IPI math. Teachers have questioned IPI for slower children. This should be investigated. Mean scores are slightly higher than those of group two. The shaded questions may have caused these children, and the children in group two, more difficulty than children in group one. This might account for the differences.

Parent Survey

The Parent Survey (See Appendix G.) was distributed to paretnts of the IPI chil[illegible]n. A coding procedure was employed to divide the questionnaires into three groups. Parents of children with I.Q.'s of 120 and above constituted group one, 100 - 119 were group two and below 100 were group three.

Group One

Table 26 gives the percentages of responses from group one. Questions one through eight need not add up to 100 per cent as we have deleted the neutral groups and many parents omitted questions. We have recorded the actual number of responses for question nine.

Of those parents responding, the vast majority felt they were familiar with IPI purposes and the distinctions between IPI and traditional programs (questions 1 and 2). They also indicated that IPI did help children become more independent.

Seventy-one per cent believe that IPI math teaches more of the basic skills, and 79 per cent believe that about IPI reading. Fifteen per cent think the math program does not cover the basic skills as adequately as traditional programs, and 10 per cent feel that way about reading.

TABLE 26

Responses to Parent
Survey - Group I

	E_1 N = 15		E_2 N = 6		E_3 N = 21	
	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.
Familiar with IPI purposes 1.	.93	.00	1.00	.00	.95	.00
Distinctions 2.	.93	.00	.80	.00	.90	.00
Independence 3.R.	.93	.00	1.00	.00	.95	.00
3 M.	.87	.07	.83	.00	.86	.04
Material Selection 4 R.	1.00	.00	1.00	.00	1.00	.00
4 M.	1.00	.00	.83	.00	.95	.00
Basic skills 5 R.	.79	.07	.50	.17	.70	.10
5 M.	.71	.00	.50	.17	.65	.15
Children's feelings toward IPI 6 R.	.87	.06	1.00	.00	.90	.00
6 M.	.92	.08	.83	.00	.89	.05
Parent's feelings toward IPI 7.	.74	.10	.80	.00	.75	.08
Children's feelings toward school 8.	.50	.00	.67	.00	.53	.00
Discussed with children, neighbors, friends, teachers 9.	13,13,12,10		4,5,3,2		17,1,17,1,15,1,12	

1. Responses are percentages for item 1 - 8, actual numbers for 9.

The parents indicate that the children have more positive feelings about IPI than the parents themselves (questions 6 and 7). All percentages are high, and there were only two people who had negative feelings. None of the parents thought their children felt worse about school since the advent of IPI. Fifty-three per cent felt their children's attitudes had improved; the rest thought the attitudes had remained the same.

One advantage of the program is that parents discussed it. Most of them talked to their children, neighbors, friends and teachers. While it is good that almost two-thirds discussed it with their friends, we would like to see more discussion with teachers.

Many of the parents added comments. The majority were favorable; some were negative; and some were "honest criticism."

1. The question is "stacked." Certainly it is a more independent approach, but how does it compare with a traditional approach in its education value? Please understand that my comments are not directed to or meant to be a criticism of the teachers in this school. It is rather an honest criticism of a program that has been a failure.

2. One of our children who is under this system is an advanced reader and this wonderful for her. I have

heard of children who are not advanced who don't seem to benefit as much.

3. Develops a keen sense of competition amoung the children; my eldest child constantly competes with hereselt in attempting to always do better. She talks about IPI with us always in a positive and enthusiastic manner.

4. I think the best recommendation I can give is the statement my oldest daughter made at the dinner table - she was practicing multiplication tables and suddenly she said - " I love math - it's fun!" It was marvelous for me to hear this - I hated and feared math all my life and to know that she thought it was wonderful. To me this is what IPI is - a way of making school wonderful, interesting, and fun instead of a drudgery.

5. There is an interesting article in the June issue of "Changing Times" on IPI. We are furtunate to be one of the few schools who have it.

6. The little one (first grader) felt very grown up when he hearned he was to start IPI. The fourth grader is happy with it.

7. Cannot get the necessary attention to move along through difficult phases. There seems to be no minimum standards. Not very conscious of the possibility of failure.

8. One child doing exceptionally well in both reading and math - Loves school, very competetive! Second child - doing well - could do better. Is this the program, teacher, child? She doesn't like school especially.

These comments followed the trend of percentages in that they were mostly favorable to the program. The parents of children in Group one favor the program and believe it does help develop independence and positive attitudes toward school.

Group Two

Parents of this group of children also responded positively, but the percentages were not quite so high as those of group one.

The parents generally felt familiar with the program and thought that it did increase independence. There were some feelings that indicated IPI produced less independence than traditional programs. One parent questioned the idea of putting children on their own at third grade. Math fared worse than reading, but still 80 per cent of the parents made positive responses. The percentages drop on the item dealing with basic skills. Many of the comments were in this area, with multiplication tables receiving the most negative responses. The majority of the parents believe

TABLE 27

Responses from Parent Survey - Group Two

	E_1 N = 53		E_2 N = 43		E_3 N = 96	
	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.
Familiar with IPI purposes 1.	.77	.04	.84	.00	.80	.02
Distinctions 2.	.81	.06	.81	.00	.81	.03
Independence 3R.	.94	.04	.93	.05	.94	.04
M.	.82.	.08	.88	.05	.85	.06
Material Selection 4R.	.89	.04	.88	.02	.89	.03
M.	.82	.08	.79	.02	.81	.05
Basic skills 5R.	.65	.10	.62	.02	.66	.10
M.	.52	.22	.61	.09	.56	.20
Children's feelings toward IPI 6R.	.75	.08	.79	.17	.77	.05
M.	.70	.09	.80	.02	.74	.06
Parent's feelings toward IPI 7.	.65	.08	.80	.02	.72	.06
Children's feelings toward school 8.	.43	.00	.53	.04	.77	.01
Discussed with children, neighbors, friends, teachers 9.	36,28,27,30		30,28,26,20		66,56,53,50	

the programs do teach the basic skills. Only 10 per cent in reading and 20 per cent in math disagree. The rest indicated no difference.

Forty-seven per cent of the parents thought that their children's attitudes toward school have improved since IPI was started. Only 1 per cent felt the attitude had become worse. There was a difference between the two schools on parents' feelings toward IPI. Both were positive; but in one case 65 per cent of the parents were in favor, while 80 per cent of the other parents were. Of the remaining parents, most were neutral; and only 8 per cent in one school and 2 per cent in the other were negative.

Parents consistently thought their children like IPI, and the parents discussed the program a great deal with their children, neighbors, friends, and teachers.

Group two parents appear to favor IPI and seem to understand it. We have included some of the comments they added to the survey.

1. Comments: My child feels she can work at her own pace and is not held back. My child is much more interested in reading, especially independent reading.

2. My child is much more interested in attending school, as she is interested. Whereas before she was somewhat bored with the other method of teaching.

3. I think you have to give it more time and discipline. He had only first grade of traditional. They like the system very much.

4. Comprehension was improved.

5. I think my children like IPI math. My daughter says she does not know many things in math as well as she wishes she did. She worried that she passed some of the tests by guessing! I think multiplication tables suffer a bit.

6. IPI is fine for some children. I don't think it is necessarily so for the slower more immature child that needs more teacher direction than the faster or more ready child. Some children aren't able to work completely independently, with being reminded frequently. If they aren't, they seem to lose their trend of thought ; if left to wait any length of time for help, they will also forget what they needed help with. They don't like it.

7. Some good points in program but most favorable results with competent teachers.

8. The more I found out about it the more I dislike it. Most of us pray nightly that you will throw it out.

9. Because she is able to work at her own speed, she has seemed to be at a standstill. When she came to a snag, it seemed to me she would have stayed there had she

not gotten the proper help at home. Brief individual help after pretest, if possible, would speed progress.

10. If the child is a self motivated child and enjoys what he is doing and is competitive - YES very much so - however, if the child has any problems, lazy, unable to motivate himself, he can stall very easily, - then say less.

11. I'd like to add here that both of my children take a great interest in reading and with genuine enjoyment. I commend the reading program for this. I feel positive because my children have commented to me in a positive fashion. They truly feel they are learning so much.

12. The drawback to IPI is the time spent waiting for help in present or new work.

They seem to like the reading IPI.

Enjoys reading the stories at her own speed and interest.

13. They like "skipping" the things they do know and working on what they don't know. Avoids boredom.

14. They seem more interested in their subjects except math. Our child is very interested in IPI reading; however, math does not have the same effect.

15. They know no other method - I feel they're left on their own too much - they are too young.

My child feels IPI is the much better method over ordinary classroom instructions. They know what level they are in.

16. My child seems to be more enthused with her school work under the IPI program. This is the only program they know.

17. I have three children in the program and each case is so different from the other I feel evaluation is difficult. I'm giving my impressions on the one child who had been given the experience from the very beginning of her education.

18. Feel that the factors are not taught.

19. I have some misgivings on my child's getting her basic skills, especially in math.

Group Three

Again we find a high degree of familiarity with the program and an extremely low percentage of parents who feel that they are not familiar with the program. They agree that the program does increase independence with a slight indication that reading increases it more than math.

The percentage of positive responses drops when discussing the basic skills, but it still remains above the 60 per cent level. The significance is that over 95 per cent of the parents are positive or neutral, with only 4 per cent believing IPI does a less adequate job in math

Group Three

TABLE 28

Responses from Parent Survey - Group Three

	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.
Familiar with IPI purposes 1.	.90	.00	.81	.00	.87	.00
Distinctions 2.	.83	.03	.86	.07	.84	.04
Independence 3R.	.90	.07	80	.00	.85	.05
M.	.79	.14	.80	.00	.79	.09
Material selections 4R.	.93	.04	.87	.00	.91	.02
M.	.83	.03	.80	.00	.82	.00
Basic skills 5R.	.68	.03	.53	.00	.63	.02
M.	.64	.03	.60	.07	.63	.04
Children's feelings toward IPI 6R.	.83	.00	.67	.00	.77	.00
M.	.69	.00	.69	.00	.69	.00
Parent's feelings toward IPI 7.	.62	.15	.50	.06	.57	.12
Children's attitude toward school 8.	.55	.00	.57	.00	.56	.00
Discussed with children, neighbors, friends and teachers 9.	19,19,21,16		8,10,10,7		17,29,31,23	

and 2 per cent in reading.

Parent positiveness is lower than the children's. The parents who feel negatively toward the program represent 12 per cent of those responding. Not one of those people believed that their children dislike IPI. The percentages for children's feelings showed that 77 per cent were positive toward reading and 69 per cent toward math. There were no negative responses in either category.

No parent stated that his children's attitudes toward school worsened since IPI. More than half of them felt the attitudes improved. This becomes more significant when we recall that this is the group which represents the slow children. We have included a sampling of their comments.

1. He is proud when reaching a new level and feels an accomplishment on his own.

2. IPI is fine for most children that are ambitious enough to want to get ahead, but what about the children that are slow and need to have someone push them into doing their work?

3. I do not feel it is the "greatest" program, as we have been led to believe. I cannot see that the "value" of this program justifies the apparent cost of it.

4. They like it! And so do I!

5. Our child feels that he is doing his best - and, because he is being rewarded, he is doing his best.

One reason - of many - I changed from Q of R to Grand Wood - excellent math opportunities.

6. The children seem to enjoy learning with this way of teaching.

7. Has really gone to town with his best subject.

8. I'm thrilled they have offered IPI to Brentwood School. A great advancement in a child's development. The IPI in reading seems to work out fine. A positive attitude toward IPI is to be expected from a typical student. The IPI in math I feel is harder way into the world of math.

9. I have said and written this before: Brentwood School and School District 59 must reasonably prove that IPI is better than traditional teaching techniques before I will be convinced it is better.

10. We don't hear as many comments regarding math as reading but we have noticed more ability in using money values.

11. I have heard only one complaint - being out of a particular IPI test of CET and having to find something to do while waiting for a problem to be explained by teacher. I feel IPI is OK except I think group classroom participation is better than working alone. IPI sometimes seems like a very lonely way to work.

They think it's wonderful!

In general we find the parent's attitudes are positive. There were comparatively few negative responses in any of the groups. Group one was slightly more positive than group two, which was slightly more positive than group three. These differences were slight. We expected this trend, as parents of children who are doing well are usually satisfied. We expected less favorable results from group three, as these are the children who usually are having difficulty. The lowest percentages were on the basic skills questions. These were still generally positive. Children's attitudes toward school were positive, and this includes the group of slower children. The vast majority of parents are satisfied.

Teacher Survey

The teacher survey (See Appendix H.) was developed locally with the assistance of Dr. Robert Stake. Several interviews were held with randomly selected teachers from IPI schools. The teachers were asked to rate their feelings about IPI in September and November of 1967 and January and March of 1968. They were asked to use a five point scale with five as the most positive. The results are shown in Table 29.

It is interesting to note that each negative comment was coupled with an explanation by the teacher and that each of the three was entered by a different teacher. The tally in

TABLE 29

Teacher Attitudes Toward IPI

	5	4	3	2	1
September 1, 1967					
Brentwood School	9	2			
Grant Wood School	9	4			
November 1, 1967					
Brentwood	11		1	1	
Grant Wood	11	2			
January 1, 1968					
Brentwood	9	3			1
Grant Wood	11	3			
March 1, 1968					
Brentwood	9	3			1
Grant Wood	9	5			

the very negative column occurred when the teacher introduced IPI to her first graders. Her next tally was in the most positive column with the explanation that once her children caught on, they loved it and really were working independently. The teacher who ended with a negative feeling stated that she still likes IPI; but she was very disturbed with the materials and she also had serious questions about IPI's appropriateness for slow children.

The staffs of both schools are unanimously in favor of the program; however, they are aware of the limitations and weaknesses in it. The major complaint pertained to the materials. They were slow in coming, too often gave poor directions, and too often they were too hard. One teacher showed his irritation with the directions by adding this comment, "The directions are not clear enough - nor are they easy enough. For [editorial deletion], we're not teaching the kids vocabulary - we're teaching them a process (in math or reading) or a skill!"

Another serious question that was raised often pertained to the slow child and the child who lacked self-direction. One teacher suggested a simplified IPI for slower children. The difficulty in providing enough individual attention was also brought out. One comment suggested that the aides or the child write out the prescription, as that is not too difficult. That way the teacher would have more time to tutor and to work with small groups. That idea was repeated in a few of the interviews.

While the teachers were harsh with their criticism, they were stronger with their praise. There were twelve comments that said the most favorable aspect of the program was the way in which it allows the individual to proceed at his own rate on his own level. There were several remarks along the line of "independence, highly motivating", and "all have some success."

Some remarks did not pertain to the student, but to the teacher. "I changed my children from five years in Catholic schools for this program. Now that I'm teaching it, I like it even more." "The program has given me a new awareness of individual children." "It fires up the staff." One of the teachers who has been with the program since we first adopted it, and who is aware of the purposes, said, "A very personal discovery that given time, IPI really does change teachers experiencing it and seeing it."

The IPI teachers are totally committed to the program. They are aware of the problems, but they indicate that the problems are outweighed by the advantages.

CHAPTER VII

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This study was undertaken to evaluate the effect of Individually Prescribed Instruction on the independent behavior of gifted children in two schools in the Elk Grove District. Two additional hypotheses were formed that dealt with effective utilization of time and positive attitudes toward school. The project was funded primarily by the Illinois Department for Program Development for Gifted Children.

The project was a cooperative effort among the Elk Grove District; the Learning and Research Development Center at the University of Pittsburgh, where the program originated; and Research for Better Schools, Inc., which is the major disseminating agency for IPI. Dr. Robert Stake of the Center for Instructional Research and Curriculum Evaluation at the University of Illinois provided the model for the evaluation. Dr. Stake served as a consultant to the project and with his guidance we were able to specify those aspects which we wished to investigate.

This study became an attempt to answer the following questions:

1. Is the IPI program in Elk Grove similar to the programs of LRDC and RBS?

2. Do gifted children in IPI demonstrate more incidences of independent behavior than gifted children who are not exposed to IPI?

3. Are there differences in attitudes toward reading and math between IPI children and non-IPI children?

4. What do the parents think of IPI?

5. What do the teachers think of IPI?

Design of the Study

Each IPI school was paired with a geographically close, non-IPI school. By making these geographic pairs, we assumed that factors such as socio-economic background could be eliminated. We found some significant differences among the staffs of the four schools. The control schools had more teachers with five or more years of experience and fewer teachers with two or less years of experience. The control teachers were more discipline-oriented than IPI teachers according to the results of the Denny-Brameld instrument (See Appendix B). The IPI teachers showed a trend toward being more innovative than the non-IPI teachers. None of the staffs indicated a disposition toward transmissive behavior.

Conclusions and Recommendations from Background Information

1. Differences among the staffs exist to the degree that they confound the results of the study.

2. Accepting the idea that experienced teachers are more effective than inexperienced teachers we assume that the achievement scores from the control schools should be higher than from the IPI schools. This is strengthened when we consider that the non-IPI teachers are more discipline-oriented than the others. We are not sure of the effect of this on independent behavior, but we do assume that the above holds true for independent behavior in the same way as for academic achievement. This assumption is made because the independent instrument was created from IPI and non-IPI teachers' perceptions of positive, independent acts. We assume that the behaviors designated as independent are encouraged by both IPI and non-IPI teachers.

3. A follow-up study should be done with a tighter control of the teacher variable.

Is IPI in Elk Grove Similar to IPI in Pittsburgh?

In order to answer this question, the Elk Grove IPI Adoption Rationale was developed. This rationale was examined and compared to LRDC and RBS's rationale by each of the three agencies. General agreement in philosophy, purpose components, and goals was found.

Some of the major considerations upon which agreement was found were:

A. Individualization of learning experiences in terms of the child's rate and proficiency does take place.

B. Opportunities for the child to make decisions and operate in an autonomous manner exist.

C. Individual prescriptions are written. There is concern here that, as a result of time factors, teachers may be becoming too mechanical in their prescription writing.

D. The mastery criterion concept, coupled with individual prescriptions and small step progress, make it possible for almost every child to achieve success.

We found that we share the same concers - placement tests, role and function of the teacher, and learning situations for children. RBS found several children had been inappropriately placed in specific units following the placement tests. This was common to all IPI schools, and new manuals have been prepared to reduce this problem. The tests have also been improved.

In one of the Elk Grove schools they have been using the Learning Center Director as a "floating teacher" on occasion. A floater is a teacher who is not assigned to a particular group of children, and who, therefore, conducts individual or small group instruction as the need arises. A recommendation for consideration from Dr. Bolvin, LRDC, was to combine four classes of children with three teachers serving in the regular manner and the fourth teacher acting as the floating teacher. Team planning sessions would be used to determine the needs for small group instruction, as well as identifying the problems of individual children and discussing the strategies and problems of the program. It is the writer's opinion that team planning time be increased for the above reasons.

LRDC and RBS are examining the question of mechanization of the program through the practice of giving many children the same prescription. Some children in Elk Grove have been writing their own prescriptions. After the teacher identifies the skill the child needs, he has been allowed to examine the available materials and determine which of these will lead him to mastery of the skill. The question of prescription writing needs further examination, and it is being investigated by both LRDC and RBS.

Conclusions and Recommendations from Similarities of IPI Programs

1. Philosophically and operationally the programs are generally the same.

2. Differences in operations appear mainly in the use of floating teachers and planning time.

3. The effects of these differences should be investigated.

4. A study should be conducted concerning children's writing of their own prescriptions. This should be expanded to include children's selection of units to be studied.

Do Gifted Children in IPI Demonstrate More Independent Behavior?

Our original plan was to develop an independence scale that was based on teacher's descriptions of dependent and independent acts. A questionnaire (See Appendix C) was distributed to two hundred teachers. The instrument asked them to describe specific acts of dependence and independence. Their responses were rarely in behavioral terms or even in terms close enough to identify the specific act. "Is secure, confident, works well with others, and work shows thought" were typical responses. The responses did indicate general perceptions, and we developed our scale from the general categories identified from the questionnaire.

The general categories that were developed were the same for IPI teachers and non-IPI teachers. There was also much similarity in the specific responses. Usually both groups limited themselves to "positive" acts of independence. "Positive" acts are those which are approved by the teacher and the class.

We were faced with the question of distinguishing between positive-independent acts and positive acts. If a child was carrying out the teacher's instructions, we had no way of determining whether that act was independent or dependent. The results from the teachers' survey did not indicate a distinction between positive and positive-independent types of behavior. We could not determine whether the teachers intended this distinction or not. We decided to eliminate the positive actions from the independent aspect but to include them as being related to effective utilization of time. We assume that following the teachers instructions was an effective use of time for most children.

Our positive-independent acts were limited to the type of act that indicated some personal involvement with the task. When a child went above and beyond the teachers instructions, or if he presented something appropriate that opened him to criticism, (teacher's or peers'), we considered this an independent act. If his questions or comments pertained to new interpretations, new concepts, new concepts or indicated disagreement, we considered them to be independent.

Our independent scale was developed from the responses of the teacher questionnaire. We concluded that one scale could serve both IPI classes and non-IPI classes. The scale that was used included only those positive acts that we defined as independent. Negative incidents and such positive acts as carrying out instructions were excluded. The scale cannot be used as if it indicates a dependent-independent continuum.

The scale was administered to all children (in each of the four schools) who were in third, fourth, and fifth grade and who had I.Q. scores of 120 and above. The data was interpreted according to independent behavior, and effective utilization of time. Scoring was done on a cumulative basis. A summation of incidents defined as positive-independent was used to identify the independence score. The totals for effective utilization of time consisted of the summation of all positive incidents.

Conclusions and Recommendations from Independent Behavior

A. Gifted students in IPI demonstrated more incidents of independence than gifted students not in IPI. These differences were statistically significant at a level of less than 1 per cent chance of error.

B. There was trend indicating that older students in IPI demonstrated more incidents of independent behavior than did younger children in IPI. This trend did not appear in the control schools.

C. There were no significant differences between the behavior of the groups related to the effective utilization of time. There was a trend indicating that IPI students did use their time more effectively.

D. The study should be repeated with a broader definition of independence.

Are There Differences in Attitudes?

All third, fourth, and fifth grade students in the four schools were asked to take an attitude questionnaire related to math and another one related to reading. The children in the IPI schools were asked to take additional questionnaires, one concerned with IPI math and one with IPI reading. All questionnaires were designed to elicit positive and negative attitudes. The questionnaires were coded in a manner that allowed us to separate the data according to the I.Q. score of the student. Three categories were established - I.Q. scores of 120 and above, scores between 100 and 119, and scores below 100. The questionnaires were adapted from instruments developed by Dr. Mary Huser, Illinois State University.

Conclusions and Recommendations from Attitudinal Survey - I.Q.'s of 120 and Up

Reading:

A. There were no significant differences between the scores of gifted children in IPI and gifted children not in IPI.

B. The non-IPI students had a slightly lower mean score than did the IPI students. (A lower mean score indicated a more favorable attitude.)

C. All four schools indicated favorable attitudes. The scale used ranged from 1 to 4 with 2.50 as the separation point between positive and negative.

D. Non-IPI gifted children scored a mean of 2.04 and IPI children a mean of 2.11. While positive, these mean scores do not reflect a strongly positive attitude toward reading by our gifted children. This should be investigated and improved.

E. Gifted children in IPI had a more positive attitude toward IPI reading than toward reading in general. Their mean score from the general survey was 2.11, and from the IPI survey it was 1.58. (The same four point scale was used, with 1.00 as the absolute, positive score.) This is significantly more positive at less than the 5 per cent level of chance occurrence.

F. Attempts should be undertaken to discover the factors involved in the more positive attitudes toward IPI reading. These factors utilized properly might improve children's attitudes toward reading in general.

Math:

A. Gifted children's attitudes toward math were more positive than toward reading in all four schools.

B. There was a trend (significant at less than the 15 per cent confidence level) indicating that IPI students have more favorable attitudes toward math than do non-IPI students.

C. It appears that as IPI students grow older their attitude toward math improves. The opposite appears to be true in the control schools. Third grade non-IPI students indicate a more favorable attitude toward math than do third grade IPI students. Non-IPI third graders had a mean score of 1.38 while their counter-parts obtained one of 1.75. (Same four point scale was used.) This difference was significant at the 10 per cent level of confidence. By fourth grade the IPI mean score is lower, but not significant. In fifth grade the trend continues and by comparing the IPI student's mean score of 1.55 with the non-IPI student's mean score of 1.82 we find a difference that is significant at less than the 5 per cent confidence level.

D. There were no significant differences between the student's IPI math scores and their scores for math in general. Mean scores were both highly positive. (1.51 IPI math, and 1.55 math in general). The similarity between these math scores illuminates the difference between IPI reading and reading attitude scores. These differences should be investigated.

Conclusions and Recommendations from Children's Surveys - I.Q.'s between 100-119

Reading:

A. The mean scores of IPI and non-IPI children indicated positive attitudes toward reading, with no significant differences between the two groups.

B. In both groups the mean scores rise as the children grow older. This should be examined as it indicates a less favorable attitude toward reading as children continue in school.

C. The mean scores of IPI children are consistantly lower than the scores of non-IPI children.

D. IPI students in the I.Q. range of 100-119 showed more favorable attitudes toward IPI reading than toward reading in general. The grade level totals did not show significant differences, but there was evidence of a positive trend in fifth grade.

E. The fifth grade trend toward a more favorable attitude toward IPI reading than toward reading in general should be studied. If the factors can be determined, they possibly could be used to stop, or slow down, the generally negative trend indicated by the higher mean scores at the older grade levels.

Math:

A. IPI students indicated a trend toward more favorable attitudes toward math compared to the attitudes portrayed by non-IPI students. Significance was found to be at less than the 20 per cent level.

B. The attitudinal IPI mean scores were lower than those of the non-IPI mean scores, at each grade level.

C. There do not appear to be differences between IPI student's attitudes toward IPI math, and their attitudes toward math in general.

D. Students in all four schools indicated positive attitudes toward math.

Conclusions and Recommendations from Children's Attitudinal Surveys - I.Q.'s of 100 and Below

Reading:

A. Children in this group still have positive attitudes toward reading, but they are less positive than the attitudes of the children in the other two groups.

B. An effort should be made to improve these attitudes.

C. The mean scores of IPI children were lower than those of the non-IPI children in all cases other than between the fifth grades at Experimental School One (E_1) and Control School One (C_1). This led to a higher total fifth grade mean for IPI schools. The scores were not significantly different, although a trend was indicated in favor of the non-IPI fifth graders.

D. The E_1 fifth graders showed a negative attitude toward reading in general. They had a mean score of 2.98. (2.50 was the separation point.) Their mean score of 1.95 on the IPI reading attitudinal survey is more positive than the other mean is negative. They feel negative toward reading, but positive toward IPI reading. This difference produced the only significant results in the comparison between attitudes to IPI reading and reading in general. This was at a confidence level of less than 1 per cent.

E. The reasons for the differences between the attitudes should be determined. Those factors which produce a more favorable attitude toward IPI reading should be used to improve students' attitudes toward reading in general.

Math:

A. Children in the four schools have favorable attitudes toward math. Their attitudes toward math are more favorable than their attitudes toward reading.

B. There were no significant differences between IPI students and non-IPI students in terms of their attitudes toward math.

C. This group of IPI students with I.Q. scores of below 100 had higher mean scores on the IPI math attitude survey than they had on the general math survey. While these scores were not significant, serious consideration must be given to the relationship of children with low I.Q. scores and IPI.

What Do Parents Think of IPI?

A questionnaire concerning attitudes toward IPI was sent home to the parents of the IPI children in grades three, four and five (See Appendix G). They were asked about their knowledge and feelings about the program. The questionnaire was coded in the same manner as the children's questionnaire in order to permit us to tabulate the results in the same categories as the children's surveys. (I.Q. scores of 120 and up, 100-119, and below 100). Positive responses were considered favorable to IPI. In the body of this study the results were results were reported for each group. In this summary the conclusions are given for all the groups.

Conclusions and Recommendations from Parent Survey

A. On almost every question the majority of the parents responded positively. The vast majority of those who did not respond positively responded in a neutral manner. The negative responses were at a minimum.

B. Although the majority of parents believed IPI does teach the basic skills, the neutral and negative percentages were high for this question. RBS is in the process of comparing IPI to the Iowa Tests of Basic Skills. The results of their comparison should be distributed to the parents.

C. Parents of children with the highest I.Q. scores were more positive than the parents of children with I.Q. scores between 100 and 119. This group was more positive than the parents with children with the lowest scores. This was expected, and it should be noted again, that all groups were positive.

What Do the Teachers Think of IPI?

All IPI teachers in the two schools were asked to rate their feeling about IPI at specific times of the year. (See Appendix H.) A series of informal interviews was held with randomly selected teachers.

Conclusions and Recommendations from the Teacher Survey

A. The staffs of the two schools strongly favor the program.

B. The major criticism concerned materials. Too often they were unavailable, did not provide clear directions for the children, and were too difficult. Time should be provided for teachers to work on material.

C. Several teachers were concerned about the slow child and the child who needs much direction. This needs consideration and action.

D. Many teachers complained about the amount of tasks required of the children as a result of the different evaluations. Next year efforts should be coordinated more efficiently.

E. Teachers wanted more feedback from the evaluations and more information about the general development of IPI.

F. The most favorable aspect of the program, according to twelve teachers, was the manner in which children were able to work on their own level, at their own rate.

G. Others thought the most favorable aspect was that children acted more independently and each child met some success.

H. The teachers also discussed how IPI has made them more aware of individual differences among children and how they are able to apply their new knowledge when teaching other subjects.

Conclusions and Recommendations: General

A. The program appears to be fulfilling the objectives of increasing independent behaviors of gifted children.

A_1. There appears to be an increase in these behaviors as children mature. This trend does not appear in the control schools.

B. On the whole, IPI students indicate slightly more positive attitudes toward reading and math than do non-IPI children. These differences usually are not significant statistically.

B_1. In the majority of instances, IPI children showed more favorable attitudes toward IPI reading and IPI math than toward reading and math in general.

B_2. The factors involved in the more favorable attitudes toward IPI should be investigated. It appears that children become less favorably disposed toward reading as they become older. The factors which led to the more favorable attitudes toward IPI may possibly help children improve their attitudes toward reading in general.

C. Parents of children in IPI generally have positive feelings about the program. They are well informed and the communication should be continued.

D. The teachers are most knowledgeable about the strengths and weaknesses of the program. Time should be provided for them to employ their knowledge toward improving IPI

E. Careful consideration should be given the slow child and the non-selfdirecting child. A coordinated effort that employs several techniques to improve the educational opportunities for these children should be undertaken.

E_1. This study should be repeated with the addition of the following:

1. Broaden the definition and scope of independence.
2. Include the teacher variable.
3. Include individual conferences with students and parents.

APPENDIX A

Teacher Characteristics

Name: Mr.
Mrs.
Miss ____________________ School ____________________

Subject(s) and grade levels presently teaching ____________________
____

Do you teach IPI reading? ______ IPI math? ______

If yes, number of reading classes ______

math classes ______

Average number of students per class ______

Degree

Degree(s) held: ____________________
____
____

Undergraduate major ______________ minor ______________

Hours beyond highest degree ____________

Graduate major ______________ minor ______________

Are you presently working toward an advanced degree? ____________

Total years of teaching experience, 1-2 ______ 3-5 ______
over 5 ______

Age,

Under 25 ____ 25-30-_____ 35-40 _____ over 40 _____

APPENDIX B

Denny-Brameld Instrument

Directions:

Please check one of the three choices (a, b, or c) provided for each item. Even though in some cases none of the three may precisely express your belief, select whichever one of the choices that comes nearest to expressing your belief. Please do not leave any item unchecked. Thank you.

* * *

1. Miss Clark, who is studying to be an elementary teacher, is assigned by her professor to several manuals used in social studies at the third-grade level. Her problem is to evaluate the different kinds of skills that each manual emphasizes:

______a. First manual: Generating good social problems appropriate to age level is most important.

______b. Second manual: Above all, the child must develop ability to find accurate information and acquire as much aocial knowledge as possible.

______c. Third manual: We should begin early to develop the child's basic attitude toward achievement of challenging human goals.

2. For his opinion survey, a sociologist interviews farmers. One of his interview questions is: "Why do you go to church on Sunday?" Responses included:

______a. Farmer K: Because I feel I receive fresh inspiration for my work the following week.

______b. Farmer Y: Because I become more sensitive both to my own real nature and that of other human beings.

______c: Farmer Z: Because I seek to understand the thought and traditions of my religion.

3. A social studies class at Huntsville District School is undertaking a unit on consumer education. From their research, students have reported, among others, these varying viewpoints to the class:

_____a. The typical consumer is, after all, the ordinary human being trying to fulfill the best that he can for himself and his family, psychologically as well as physically.

_____b. The principal objective of consumer education is to teach every buyer how to spend each dollar in order to receive maximum benefit from his income.

_____c. If consumers are to perform intelligently, their main task is to become informed on the nature and operation of an efficiently productive economic system.

4. Jounalists are asked to speak at a Metropolitan Universaity forum about American political structure and the role of students. According to three different journalists, students:

_____a. Should have a firm grounding in the operations of our present political system if they are to become responsible citizens.

_____b. Should share actively in contructing new political designs for the future.

_____c. Should be made aware that gradual change is needed in our political order so that it may function more effectively.

5. A meeting of all social studies teachers in the secondary schools of Newborough was held last week. The central task was to formulate "the total image of man" as a guide for the curriculum. Three statements written by teachers beforehand attracted greatest interest:

_____a. Teacher A: The ideal should center in human ability to direct change in behalf of a creative image of man and society.

_____b. Teacher B: In our rapidly changing era when important traditions are threatened, the ideal man must above all understand and preserve our way of life.

_____c: Teacher C: The image of the ideal man should grow gradually out of people's needs and experiences.

6. A speech contest is held at Central High School. The topic: "Why is education necessary for young people?" Different speakers contend that education:

_____a. Is necessary because young people should understand the accumulated knowledge of the ages and of our own civilization.

_____b. Helps to fulfill inherent potentialities in behalf of ultimate achievements in life.

_____c. Encourages young people to become more aware of themselves and of their relations with others.

7. Teachers in the Mountainside Regional School are discussing the possible uses of art in the social studies. They make several suggestions that art:

_____a. Should be used as an instructional tool to help the student gain information about the subject under study.

_____b. Helps to provide students with clearer pictures of the ways people live and adapt to different conditions.

_____c. Should be used to provide deeper insight into the personal and social purposes of man.

8. Last Sunday a discussion on the radio involved three influential citizens who were concerned about the role of the social studies in their town:

_____a. Speaker 1: The main task is to provide knowledge of the history of Western civilization plus some exposure to such social sciences as sociology.

_____b. Speaker 2: The central theme at any level should be the goals of humanity.

_____c. Speaker 3: Usefulness to everyday life and practice is primary.

9. Several groups of junior high-school students are gathering information about the giant redwood trees of California. In their research they learn about the proposal for a Redwood National Park. But different groups take alternative stands on this proposal:

_____a. Since the redwoods are beautiful and irreplaceable, nearly all of them should be set aside in a large national park.

_____b. Redwood trees must be protected and preserved to some extent, but private companies must also be allowed to cut a fair amount.

M

_____c. Redwoods are beautiful, to be sure, but lumber companies still have a right to cut trees on their own property, in accordance with our economic tradition.

10. A boy and a girl of about 17 years of age walk into the South Senior High School cafeteria holding hands. The boy is a Negro and the girl is white. Later in the day, Miss Franklin's students discuss what she, a social studies teacher, would think about this situation. Would she say?:

_____a. They have a right to choose their own partners, but it would be best if they kept their friendship outside of school.

_____b. We should feel proud of this boy and girl for breaking through a social barrier.

_____c. Young people of different races should not get involved because such a relationship only causes difficulities for them and their families.

11. High school juniors are discussing the alleged superiority of Americans.

_____a. Bill: They are superior because recent history has demonstrated that Americans lead the world.

_____b. Judy: We need to find out in what respect Americans may be superior or inferior.

_____c. Tom: There is only superior people - the human race as a whole.

12. Officers of the Roosevelt Junior High PTA have different views on sex education:

_____a. Speaker 1: It isn't the function of the school to teach a matter that is the responsibility of the home.

_____b. Speaker 2: Moral and social as well as physiological aspects of sexual behavior should be discussed freely in the classroom.

_____c. Speaker 3: Study of the physiology of sex should be included in the curriculum.

13. National news commentators are arguing on TV about the Negro riots that took place in various cities:

_____a. Mr. Muntreid: Laws should be tightened and police protection strengthened to insure against further riots.

______b. Mr. Brinkite: OK, but even more worth considering are remedial measures like greater job opportunities.

______c. Mr. Cronkley: You miss the high point. Negro demands for much more complete economic and civil rights must be met.

14. One of the units in Blackburn High School deals with Communism. Social studies teachers are discussing the best ways to teach it:

______a. Miss Mennelli maintains that students should study a basic source such as *The Communist Manifesto*; they should be helped to read it carefully and critically.

______b. Mr. Walters hold that it is wiser to use a textbook that emphasizes communism's opposition to democratic principles and institutions.

______c. Mrs. Brogan favors studying *The Communist Manifesto*, but would also encourage free class discussion in order to seek agreement as to whether students may or may not approve of Communism.

15. Congressmen were chatting in the Corridors of the National Capital about the proposed Fund for International Development:

______a. Congressman X: I support this proposal because it can advance the purpose of a united mankind.

______b. Congressman Y: Why not be practical and simply admit that the proposal strengthens American relations abroad?

______c. Congressman Z: I intend to vote against greater appropriations because we need to reduce federal spending for such foreign ventures.

16. A local television station carries a college panel discussion by officers of student organizations concerning student demonstration:

______a. Senior class president: Demonstrations should be restricted by college authorities.

______b. Secretary of debating society: They are one effective way by which students can express themselves.

______c. Chairman of student government: They should be allowed as long as the rules of college authorities are respected.

17. At a PTA meeting, Mr. Montgomery, chairman of the social studies department of the Westmont School was asked to speak. The main point he made was this:

> Some parents contend that the social studies curriculum here is obsolete. They criticize it for not coping with controversial issues such as racial and ideological conflicts. I must answer that, although we recognize that these issues are important at the adult level, we must respect those influential organizations in our community which maintain that it is not our proper place to deal with such issues.

After the meeting parents reacted as follows:

______a. First parent: Mr. Montgomery makes a lot of sense.

______b. Second Parent: I agree with those who want controversial issues discussed.

______c. Third parent: Not only should controversial issues be discussed, but students should meet them face-to-face through direct community involvement.

18. Miss Rafferty plans to teach a junior-high school social studies unit on the population problems of India. She is undecided whether the emphasis should lie in;

______a. Knowledge of population structure according to such data as class and rate of growth.

______b. Religious, moral, and other traditional values of marriage and the family.

______c. Ways that population growth can be controlled, such as family planning, in order to eliminate starvation and poverty.

19. During a seminar at an educational conference, teachers were told about the different uses of political cartoons as a teaching device. Mr. Beals, Mr. Lang, and Mr. Carson, respectively, stressed that cartoons:

______a. Are sometimes useful in revealing the deeper meaning of historical events.

_____b. Can help motivate students to become more critical and more useful citizens.

_____c. Can bring to life the character of important political leaders.

20. "Of various uses of an overhead projector in your classroom, do you consider some uses more important than others?" This question was considered by teachers at Kennedy School. Here were some of the responses dropped in the suggestion box:

_____a. To enhance communication through visual involvement.

_____b. To help students obtain a deeper understanding of the subject under study.

_____c. To increase facility of learning through visual aids.

21. Students were asked to make suggestions for a study of their city. These were their ideas:

_____a. John: Let's send for brochures, read as much as we can, look at films, and prepare a report.

_____b. Ted: Let's make a trip to city hall, tour some neighborhoods, and make a report with photographs of our experience.

_____c. Martha: Let's develop a new city plan based on discussion with city officials, civil rights leaders, and citizens of different social classes.

22. A debate on whether Communist China should or should not become a member of the United Nations sparked considerable discussion among members of the class.

_____a. Pam: The U.N. must not admit Communist China

_____b. Betsy: Communist China should become a member now.

_____c. Dan: The U.N. Should reconsider admission of Communist China in due time.

23. Teachers in the Eastbrook School were comparing notes on their units on the Soviet Union. They found some variations in emphasis:

_____a. Mrs. Thomas: I like to compare Soviet and American rates of technological progress.

_____b. Miss Lane: I emphasize the cultural values of the Russian people so that students can get the "feel" of the country.

_____c. Mr. Sachs: I stress historical periods, ideologies, and geographical regions.

24. The principal of Smithville High is seeking an experienced social studies teacher. He has discussed the candidate's qualifications with three associates, each of whom stressed a different primary qualification:

_____a. Mr. Jones: The record of courses and grades in history and other relevant studies.

_____b. Mr. Stone: Recommendations of former employers as to teaching skills.

_____c. Mr. Ladd: Personality and interest in students.

25. A local association of churches sponsored a public debate on the war in Vietnam. Three public figures participated:

_____a. Speaker 1: The Vietnam war must be won to prevent the expansion of Communism.

_____b. Speaker 2: Our government should initiate a gradual deescalation.

_____c. Speaker 3: U.S. troops should be withdrawn without further delay.

26. Mr. Smith is planning an experimental high school unit on the role of religion in the modern world. He asks his colleagues which of three approaches seem most desirable:

_____a. Approach #1: Religious leaders of various faiths offer a series of lectures followed by discussion periods.

_____b. Approach #2: Students learn about major religions comparatively through visits to churches, synagogues, and other kinds of first hand experiences.

_____c. Approach #3: Students and teachers of different views on religion share their convictions, seeking critically individual and group appraisals.

27. At lunch time a group of teachers is discussing methods of evaluation. Different views are expressed:

_____a. Teacher X: I prefer to use objective tests because they are the most effective method of evaluation.

_____b. Teacher Y: I emphasize a combination of objective tests and students self-evaluation.

_____c. Teacher Z: My students and I work out the criteria of evaluation which together we put into practice.

28. Teachers in Memorial High School are encouraged to make adequate use of maps in their classes. They prefer doing so for different reasons:

_____a. Miss Cals believes that students should have adequate geographical knowledge of continents and countries of the world.

_____b. Mrs. Spence believes that students should make frequent use of maps in order to become skillful.

_____c. Mr. Drake believes that maps aid students in developing perspectives on cultures of the world and their diverse peoples.

29. A student doing a survey asked teachers to respond to this question: "Should a private corporation be expected to provide training and jobs for unskilled and unemployed people?" The responses fell into three patterns:

_____a. The corporation has a public obligation to hire and train those who are at a disadvantage.

_____b. The corporation should consider such people according to the same qualifications that apply to any others.

_____c. The corporation should be urged to hire and train such people, but need not feel obligated to do so.

30. Mr. Jacobsen previewed a group of short films dealing with the history of American Indians. He found the differences in their focus:

_____a. Movie A stressed the white man's exploitation of the Indian.

_____b. Movie B stressed the Indian's interference with the white man's colonization.

_____c. Movie C stressed the way white men sometimes took advantage of Indians while Indians sometimes attacked white man's settlements.

31. Several community organizations learned that a teacher in Donaldson School was using a controversial text which they wanted withdrawn. Donaldson teachers took different stands on the dispute:

_____a. Mrs. Singer: These organizations represent many fine parents, I think the text should be replaced by a more agreeable one.

_____b. Miss Flynn: Teachers should have the right to decide which textbooks to use.

_____c. Mrs. Rank: Let's listen to what the organizations have to say and then we can consider their objections.

32. While investigating problems of slum clearance and urban renewal, Mr. Larsen's students got into a lively discussion about the significance of their recent visit to a nearby Negro community. He listened to many comments, including the following:

_____a. Nancy: Our visit provided a closer appreciation of the discrimination endured by Negroes.

_____b. Bill: We were stimulated to think more seriously about actions that should be taken to improve the conditions of minority groups.

_____c. Joe: The need of first-hand social and economic facts became more urgent.

33. Curriculum guides in several adjoining school systems included a unit on Eskimos, but some of the basic purposes of this study varied from one guide to another:

_____a. Guide X: To study about Eskimos as well as other primitive cultures.

_____b. Guide Y: To reproduce and practice with the kinds of tools that Eskimos employ in a harsh environment.

______c. Guide Z: To have children learn about the ways of the Eskimo children are fundamentally like themselves in spite of different customs.

34. When a student asks you a different question, how do you answer if you're not sure?" Miss Jones, a beginning teacher, asked the advice of Mr. Giles, an experienced teacher. He replied that he has found at least three different ways to handle such a situation:

______a. Give the best answer you can because it is important that students respect you.

______b. Admit that you don't know the answer, but find the question interesting enough to want to look it up.

______c. Although you aren't sure of the answer, give it a try anyway with the hope that you'll be helpful.

35. Harold Rogers, a teacher in the Park School, has been thinking about the increasing involvement of big companies in the field of education. He sees many implications in this trend, including the following:

______a. Large business organizations have the means to develop new educational materials so they should do so freely.

______b. Teachersshould become much more independent and creative in order to minimize the influence of big companies.

______c. Large companies have found the educational field ripe for expansion, but teachers should be discriminating about accepting their products.

36. It was decided that basic democratic concepts like liberty be included in the social studies curriculum this year at the Monroe School. At the department meeting, teachers aired their opinions:

______a. Miss Crane: I think the intellectual history and development of these concepts is one of the most important aspects to stress.

______b. Mr. Chinn: These concepts, although abstract have one important value in solving the problem of everyday life.

______c. Miss Wilson: Concepts like this hold very important meanings for minority groups today.

APPENDIX C

Cover Letter and Questionaire for Teacher Survey

Dear Teacher:

Research for Better Schools, Inc. and School District 59, Elk Grove Village, Illinois, are attempting to gather data concerning independence in student behavior. It seems the most logical place to begin is with teachers who work with children. Will you please help us by filling in the following questionaire? As we progress, you will be notified of our results.

When completing the form, remember to use your own feelings or definition of independence and dependence. We would appreciate it if you would answer all the questions. Feel free to tell us any of your reactions to the questionaire. Please complet e the form this week and mail it directly to us. We have asked for the names of the children, as later we may ask you if we can come to observe them. We certainly appreciate your help, and we thank you for aiding us in learning more about children.

Dr. Robert Scanlon
Research for Better Schools

Ethan Janove
School District 59

Name ______________________ School Address _______________

School ____________________ _____________________________

1. Please list the names of the two or three most independent children in your math class.

    1.

    2.

    3.

2. List some of the ways these children act that resulted in their being selected as independent learners by you.

    1.

    2.

    3.

    4.

    5.

3. Please list the names of the two or three dependent children in your math class.

    1.

    2.

    3.

4. List some of the ways these children act that resulted in their being selected by you as dependent learners.

    1.

    2.

    3.

    4.

    5.

5. If we laid out many examples of children's work on a table (test, book reports, pictures, homework, etc.) could you pick out the works of dependent and/or independent children?

Yes ______ No ______

If yes, what are the characteristics (generally or specifically) of dependent students work?

The independent student's work?

6. Using your own definition of independence, please indicate how important it is for your students to be independent learners.

VERY IMPORTANT				NOT IMPORTANT AT ALL
1	2	3	4	5

7. To what extent should independence in your students be one of your teaching goals?

A MAJOR GOAL				NOT A GOAL
1	2	3	4	5

8. Do you feel independent children are happier than dependent children?

VERY MUCH HAPPIER	SOMEWHAT HAPPIER	NO DIFFERENCE	SOMEWHAT LESS HAPPY	NOT NEARLY AS HAPPY
1	2	3	4	5

9. Do you feel that an "independent group" of students makes it more difficult for the teacher to perform her job?

MUCH HARDER	HARDER	NO DIFFERENCE	EASIER	MUCH EASIER
1	2	3	4	5

In each of the following situations, please indicate which of the two people involved is acting more independently. Please remember that there are no correct or incorrect choices; we are attempting to find out what teachers think. Also, we'd like to know if the distinction was easy or difficult for you to make.

10. JOHN had based his life on a philosophy of peace. Therefore, he felt it only natural to participate in the "march on the Pentagon." During the demonstration, he was arrentsted when some of his fellow marchers pushed him through the lines of the soldiers. Even though he was disturbed by the "unpeaceful" peach demonstrations, he rejoined the march when he was released.

HENRY based his life on a philosophy of peace, also, He chose not to attend the "march on the Pentagon" after careful deliberation. He concluded that the ineveitable arreats and the bad publicity would harm the cause of peace, rather than help it.

Who was more independent?

JOHN ______ HENRY _____ EQUALLY INDEPENDENT ____

My choice was -

EASY TO MAKE _____ HARD TO MAKE _____

Is this a good example of independent behavior -

FOR JOHN? ______ FOR HENRY? ______

11. DON and HAROLD were given the same homework assignment by their teacher. She gave the class an outline to follow when completing the assignment.

DON stuggled throughout the assignment. He pursued the project by following the outline. When finished, he was not very satisfied with his work. In fact, the only satisfaction he received was that he knew his teacher would be pleased he completed the difficult task.

HAROLD too, had much difficulty. He attempted to follow the outline, but was not satisfied with the results. He tried an alternative approach to the problem and was pleased with his results. He was not sure whether or not his teacher would accept the assignment in that he did not follow the prescribed procedure.

Who was more independent?

DON ______ HAROLD ______ EQUALLY INDEPENDENT ______

My choice was -

EASY TO MAKE ______ HARD TO MAKE ______

Is this a good example of independent behavior?

FOR DON?______ FOR HAROLD?______

12. The teacher told her students to read a chapter in the social studies book and be prepared to discuss it.

CHARLES reluctantly put down his library book, read the assigned chapter, and prepared for the discussion.

MIKE opened his social studies book, slipped his library book inside it, and continued reading it.

Who was more independent?

CHARLES ______MIKE______EQUALLY INDEPENDENT ______

My choice was -

EASY TO MAKE ______ HARD TO MAKE ______

Is this a good example of independent behavior -

FOR CHARLES? ______ FOR MIKE ______

13. The students in Miss Smith's class were given three choices when selecting the destination of their field trip. They could go to an art museaum, an aquarium, or to a natural history museum.

LOLLY immediately chose the aquarium. She was more interedted in the sea-horses and really wanted to see some.

JOYCE voted for the art museum. While she was more interested in the aquarium, she knew many of her friends preferred the art museum, and she wanted to help them out.

Who was more independent?

LOLLY ______ JOYCE _____ EQUALLY INDEPENDENT _____

My choice was -

EASY TO MAKE ______ HARD TO MAKE ______

Is this a good example of independent behavior -

FOR LOLLY? ______ FOR JOYCE? ______

14. In Miss Jones' health class, the children could choose their own topics for reports, or they could select one of those offered by Miss Jones. They could go to the library, the study-hall,=or remain in the room to complete their work.

HARRY spent 15 minutes developing his topic and remained in the room where he could ask for help if he needed it. He did this twice - both times to get the correct spelling of a word.

TOM selected one of the topics Miss Jones suggested and went to the study-hall to finish. He remained there until he finished. He asked no questions of the study-hall teacher.

Who was more independent?

HARRY ______ TOM ______ EQUALLY INDEPENDENT _____

My choice was -

EASY TO MAKE ______ HARD TO MAKE ______

Is this a good example of independent behavior -

FOR HARRY? ______ FOR TOM? ______

15. FRED and CLYDE were sent to the principal's office for "horsing" around. They were told to write the teacher a letter of apology. When they were alone, they both laughed and said that they weren't sorry.

FRED said that he wouldn't write the letter.

At first, CLYDE argued with him, telling him, "The principal will really make trouble if you don't," and "Our teacher will really feel better if you do, and she'll be sore if you don't."

FRED said, "I know that, but I can't. I'm not sorry and it is important to me to be honest.

CLYDE replied, "I believe in being honest, too, but it's not a question of honesty, because we were told to do it."

CLYDE wrote his letter and the incident was closed.

FRED refused and had to remain after school.

Who was more independent?

FRED ______ CLYDE ______ EQUALLY INDEPENDENT ______

My choice was -

EASY TO MAKE ______ HARD TO MAKE ______

Is this a good example of independent behavior -

FOR FRED? ______ FOR CLYDE? ______

TEACHER INFORMATION

17. Male ______ Female ______

18. Years of Experience ______

19. Age UNDER 25 ___ 25-30 ___ 30-35 ___ OVER 30 ___

CLASS INFORMATION

20. Do you teach IPI Reading? YES ___ NO ___ GRADE LEVEL ___

21. Do you teach IPI Math ? YES ___ NO ___ GRADE LEVEL ___

22. What subject do you teach if not IPI?

SUBJECT ____________ GRADE LEVEL ___________

23. Number of students in class __________

24. Administrative Grouping Plan -

HETEROGENEOUS ______ HOMOGENEOUS ___________

OTHER (please explain) ____________________

____

25. If "ability grouped," approximate level you are teaching -

VERY HIGH ___ HIGH ___ AVERAGE ___

LOW AVERAGE ___ SLOW ____

26. If heterogeneously, please use the approximate percentage of children in each category.

VERY HIGH ___ HIGH ___ AVERAGE ___

BELOW AVERAGE ___ SLOW ____

27. Please estimate the percentage of students that fall in the following socio-economic categories.

LOWER ______ MIDDLE ______ UPPER ______

28. Please identify the racial balance of your class by the percentage of students.

WHITE ______ NEGRO ______ ORIENTAL ______

SPANISH SPEAKING _____ OTHER ______

APPENDIX D

Independent Scale

Student ____________ School ____________ Grade ____

Teacher ____________ Time ____________

1. Questions asked by student

    A. Instructions and directions

        1. Previously given ____________

        2. Not previously given ____________

  B. Content

    1. Verification ____________

    2. Inferential ____________

  C. Non-Pertinent

    1. Positive ____________

    2. Negative ____________

II. Comments made by students

  A. Reiterations ____________

  B. Clarifications, extensions ____________

  C. Disruptive ____________

  D. Appropriate disagreement ____________

III. Responses to teacher

  A. Volunteers

	CONVERGENT	DIVERGENT
1. Appropriate	____________	____________
2. Disruptive	____________	____________

  B. Directed

	CONVERGENT	DIVERGENT
1. Appropriate	____________	____________
2. Disruptive	____________	____________

IV. Working on own or listening to teacher (group)

- A. Diligently and energetically ______________________
- B. Not quite, but still OK ______________________
- C. Looks around ______________________
- D. Distracts ______________________

V. Student Initiates

- A. New projects ______________________
- B. Small Groups ______________________
- C. New materials or resources (no teacher) ______________________
- D. Student aid ______________________

VI. Security Building ______________________

APPENDIX E

Reading and Math Student Surveys

ATTITUDE TOWARD READING

1.	I like to read.	A	UA	UD	D
2.	Considering all the things I'll have to keep me busy after school, I don't expect to do much reading.	A	UA	UD	D
3.	Reading is one of my favorite pastimes.	A	UA	UD	D
4.	I usually prefer to do things other than read.	A	UA	UD	D
5.	If I don't have a chance to do a few hours of outside reading each week I feel badly about it.	A	UA	UD	D
6.	I don't like to read.	A	UA	UD	D
7.	I "make time" for outside reading no matter how much work I have to do.	A	UA	UD	D
8.	Reading is fun.	A	UA	UD	D

FORM I I

ATTITUDE TOWARD MATH

1.	I like math.	A	UA	UD	D
2.	Math is one of my favorite subjects.	A	UA	UD	D
3.	I usually prefer to do things other than math.	A	UA	UD	D
4.	I don't like math.	A	UA	UD	D
5.	Math is fun.	A	UA	UD	D

FORM II

APPENDIX F

IPI Reading and Math
Student Surveys

ATTITUDE TOWARD IPI READING

1. Our IPI reading period is a waste of time. A UA UD D

2. IPI reading should be given to all boys and girls in my grade. A UA UD D

3. The benefits from IPI reading are worth the effort. A UA UD D

4. Reading taught individually helps me do better in my other subjects. A UA UD D

5. This kind of reading instruction does not help much in learning to read. A UA UD D

6. I would suggest individualized reading for all boys and girls. A UA UD D

7. I would rather study something else than reading. A UA UD D

8. I expect to be a better student after having been taught to read individually. A UA UD D

9. Had it been possible, I would have stayed in a regular textbook type reading class. A UA UD D

10. Reading is more interesting when taught individually. A UA UD D

ATTITUDE TOWARD IPI MATH

1. Our IPI math period is a waste of time. A UA UD D
2. IPI math should be given to all boys and girls in my grade. A UA UD D
3. The benefits from IPI math are worth the effort. A UA UD D
4. Math taught individually helps me do better in my other subjects. A UA UD D
5. This kind of math instruction does not help much in learning math. A UA UD D
6. I would suggest individualized math for all boys and girls. A UA UD D
7. I would rather study something else than math. A UA UD D
8. I expect to be a better student after having been taught math individually. A UA UD D
9. Had it been possible I would have stayed in a regular textbook type math class. A UA UD D
10. Math is more interesting when taught individually. A UA UD D

APPENDIX G

IPI Parent Survey

COMMUNITY CONSOLIDATED SCHOOL DISTRICT 59
ELK GROVE TOWNSHIP, ILLINOIS

PARENT QUESTIONNAIRE (SAMPLE)

School District 59 is in the process of evaluating Individually Prescribed Instruction (IPI). One aspect of evaluation is concerned with the children's parents', and teachers' attitudes and feelings about the program. We are in the process of finding out how the students and teachers feel. You can help by filling out the following questionnaire, and returning it to school.

1. Are you familiar with the purposes of IPI?

Very Familiar	Familiar	Somewhat	Not Familiar
________	________	________	________

2. Are you familiar with the major distinctions between IPI and ordinary classroom instruction?

Very Familiar	Familiar	Somewhat	Not Familiar
________	________	________	________

3. Do you feel IPI helps children become more independent than traditional programs?

Reading:

Very much so	Somewhat more	The same	Less	Much less
________	________	________	____	________

Math:

Very much so	Somewhat more	The same	Less	Much less
________	________	________	____	________

4. Do you believe that IPI affords your child more opportunities to select materials and methods on his own?

Reading:

Very much so	Somewhat more	The same	Less	Much less
________	________	________	____	________

Math:

Very much so	Somewhat more	The same	Less	Much less
________	________	________	____	________

5. Do you believe IPI teaches your child the basic skills?

Reading:

Very much so	Somewhat more	The same	Less	Much less
________	________	________	____	________

Math:

Very much so	Somewhat more	The same	Less	Much less
________	________	________	____	________

6. How do you think your children feel about IPI?

Reading:

Very Positive	Positive	Neutral	Negative	Very Negative
________	________	________	________	________

Comments:

Math:

Very Positive	Positive	Neutral	Negative	Very Negative
________	________	________	________	________

Comments:

7. How do you feel about IPI?

Very Positive	Positive	Neutral	Negative	Very negative
________	________	________	________	________

8. How do your children feel about school since IPI?

Better	Same	Worse
____	____	____

Comments:

9. Have you discussed IPI with your

Children ____Neighbors ____ Friends ____ Teachers ____

10. What were the two best methods employed by the school for you to learn more about IPI?

APPENDIX H

IPI Teacher Survey

Dear Teachers, (Related to #6 of work plan)

The following questionnaire is an attempt to find out how the teachers felt about IPI during the year. I know it will be difficult to remember precisely so just try to remember your general feelings.

I've asked for your names and schools for two reasons. One is that I may need more information from some of you. The other is that you have already given us some data on other instruments, and we don't have to ask you to do it again.

I appreciate your help. If you have any questions call me at extension 44. When you finish just return your questionnaire to me at Low. All returns are confidential and no individual results will be discussed with anyone without your permission.

Ethan Janove

1. Please rate your feeling toward IPI for each of the following months.

	Very Positive		Neutral		Very Negative
	5	4	3	2	1
9/1/67					
11/1/67					
1/1/68					
3/1/68					

2. If there were any specific things that caused you to change your attitude, positively or negatively, permanently or temporarily over the year, please list them.

3. What is the one aspect of the program that you feel the best about. This can be general or specific. If there are a couple that are so close you want to include them, please feel free to do so. Please list them in order of importance.

4. What is the one aspect of the program about which you feel most negative. Please feel free to follow the same procedure as in item #3 if there are more than one.